SIEMENS

USER'S GUIDE

OFFICE CONFIGURATION EDITOR (OCE)

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Technical assistance and sales information on Siemens Mobility, Inc. products may be obtained at the following locations:

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TECHNICAL SUPPORT: (800) 793-7233
FAX:(270) 918-7830

DOCUMENT HISTORY

Version	Release Date	Sections Changed	Details of Change
X.1	Jan 2010		Preliminary
A	Nov 2014	ALL	Initial Release **OCE Version 1.9.5**
B	Aug 2017	ALL	Added sections supporting GCP and CPU III, enhanced layout for clarity and accessibility, and removed inapplicable material.
B.1	Feb 2017	2.1, 4.5.1.3, - 4.5.1.3.3	Added material for GCP3000+ as well as compatibility with Windows 10. Section 2.1 added compatibility with Windows 10. Section 4.5.1.3 GCP3000+ Sites. Section 4.5.1.3.1 Site Configuration. Section 4.5.1.3.2 GCP Programming. Section 4.5.1.3.3 Display Settings. Updated Figures 2-1 through 2-6 to non-Admin version of Office Configuration Editor.
B.2	Nov 2018	5.2.1	Added PTC General parameter description and updated to Siemens Mobility branding.

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NOTES, CAUTIONS, AND WARNINGS

Throughout this manual, notes, cautions, and warnings are frequently used to direct the reader's attention to specific information. Use of the three terms is defined as follows:

WARNING

INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY. WARNINGS ALWAYS TAKE PRECEDENCE OVER NOTES, CAUTIONS, AND ALL OTHER INFORMATION.

CAUTION

REFERS TO PROPER PROCEDURES OR PRACTICES WHICH IF NOT STRICTLY OBSERVED, COULD RESULT IN A POTENTIALLY HAZARDOUS SITUATION AND/OR POSSIBLE DAMAGE TO EQUIPMENT. CAUTIONS TAKE PRECEDENCE OVER NOTES AND ALL OTHER INFORMATION, EXCEPT WARNINGS.

NOTE

Generally used to highlight certain information relating to the topic under discussion.

If there are any questions, contact Siemens Mobility, Inc. Application Engineering

ELECTROSTATIC DISCHARGE (ESD) PRECAUTIONS

Static electricity can damage electronic circuitry, particularly low voltage components such as the integrated circuits commonly used throughout the electronics industry. Therefore, procedures have been adopted industry-wide which make it possible to avoid the sometimes invisible damage caused by electrostatic discharge (ESD) during the handling, shipping, and storage of electronic modules and components. Siemens Mobility, Inc. has instituted these practices at its manufacturing facility and encourages its customers to adopt them as well to lessen the likelihood of equipment damage in the field due to ESD. Some of the basic protective practices include the following:

- Ground yourself before touching card cages, assemblies, modules, or components.
- Remove power from card cages and assemblies before removing or installing modules.
- Remove circuit boards (modules) from card cages by the ejector lever only. If an ejector lever is not provided, grasp the edge of the circuit board but avoid touching circuit traces or components.
- Handle circuit boards by the edges only.
- Never physically touch circuit board or connector contact fingers or allow these fingers to come in contact with an insulator (e.g., plastic, rubber, etc.).
- When not in use, place circuit boards in approved static-shielding bags, contact fingers first. Remove circuit boards from static-shielding bags by grasping the ejector lever or the edge of the board only. Each bag should include a caution label on the outside indicating static-sensitive contents.
- Cover workbench surfaces used for repair of electronic equipment with static dissipative workbench matting.
- Use integrated circuit extractor/inserter tools designed to remove and install electrostatic-sensitive integrated circuit devices such as PROM's (OK Industries, Inc., Model EX-2 Extractor and Model MOS-40 Inserter (or equivalent) are highly recommended).
- Utilize only anti-static cushioning material in equipment shipping and storage containers.

For information concerning ESD material applications, please contact the Technical Support Staff at 1-800-793-7233. ESD Awareness Classes and additional ESD product information are also available through the Technical Support Staff.

GLOSSARY

TERM	DESCRIPTION
AAR:	Association of American Railroads – An organization that establishes uniformity and standardization among different railroad systems.
AREMA:	American Railroad Equipment Manufacturing Association – An organization that supersedes AAR.
Aspect:	(Signal Aspect) The name given to a signal aspect used in PTC interface.
ATCS:	Advanced Train Control System – A set of standards compiled by the AAR for controlling all aspects of train operation.
BCM	Base Control Module
BCP	Base Communication Package or Base Station
Boot	Startup sequence for the microprocessor. On the GEO system this can be accomplished by removing, then reseating the CPU module or by pulling the 30 A chassis fuse for a few seconds.
CAD	Computer Aided Dispatch. An automated system for processing dispatch business and automating many of the tasks typically performed by a dispatcher. Abbreviated CAD (not to be confused with computer-aided design which is also known as CAD) is application software with numerous features and functions.
CDL	Control Descriptor Language – The programming language used by application engineers to customize operation, settings, and behavior.
CDMA	Code Division Multiple Access - A protocol used in cellular telephony.
Checksum	A simple way to protect the integrity of data by detecting errors in data that are sent through space (telecommunications) or time (storage). It works by adding up the basic components of a message, typically the asserted bits, and storing the resulting value. Anyone can later perform the same operation on the data, compare the result to the authentic checksum and (assuming that the sums match) conclude that the message was most likely not corrupted.
CETC	Centralized Electrification & Train Control
CLS	Color Light Signal – The GEO module used to control and monitor Color Light Signals.
Configuration File	When changes are made to the default settings in the MCF (Master Configuration File), the custom settings are maintained in the configuration file.

TERM	DESCRIPTION
CPU III	Next Generation GEO central processing unit (CPU) module.
CRC	Cyclical Redundancy Check – Used to determine that data has not been corrupted.
CTC	Centralized Traffic Control –This is also known as CAD for Computer Aided Dispatch. This is the system in the office used to control and monitor the railroad signaling system.
Datagram	In general, any ATCS packet. Several types of datagrams are defined for specific functions within an ATCS environment.
dB	Decibels
dBi	Abbreviation for decibels referenced to an isotropic (unipole) antenna.
dBm	Abbreviation for decibels above (or below) one milliwatt.
DC offsets	Condition in which one rail is kept at one voltage relative to the other even when the track circuit is disconnected.
Debounce	The amount of time an input must remain constant to be considered a valid input. Debounce prevents random spikes of electrical energy from energizing an input.
DIAG	Diagnostic
DNS	Domain Name Server
DOT Number	Department of Transportation crossing inventory number assigned to every highway-railroad crossing. The number consists of six numbers with an alpha suffix.
Drop Delay	An internal delay time between when a function is ordered off and when it actually de-energizes.
DSU	Data Service Unit
DT	Diagnostic Terminal – Siemens' PC-based diagnostic software.
DTMF	Dual Tone Multi-Frequency - The tones on a telephone or radio keypad.
ECD:	External Configuration Device – A serial EEPROM (Flash Memory) device mounted inside the chassis of the GEO unit. The ECD is used to store site-specific configuration data (MCF, SIN, UCN, and card parameters) for the CPU.
Echelon®	A Local Area Network, LAN, used by Siemens equipment.

TERM	DESCRIPTION
EEPROM	Electrically Erasable Programmable Read-Only Memory. A type of non-volatile memory used in computers and other electronic devices to store small amounts of data that must be saved when power is removed. When larger amounts of static data are to be stored, a specific type of EEPROM called a flash memory is used.
ELS	Serial Link extension board
EMP	Edge Messaging Protocol - A common message format used for edge integration. Examples of integration edges are wireless transports and various messaging systems that may be used by the various railroads (e.g., using EMP to communicate between mobile applications and back office applications using wireless communications). EMP defines the message format, header, and operating rules which facilitate interoperable message transmission, reception, decoding, and routing.
Firmware	Software saved in ROM within a module and moved into main memory RAM for runtime use when the system is powered up.
FRA	Federal Railroad Administration - The purpose of FRA is to: promulgate and enforce rail safety regulations; administer railroad assistance programs; conduct research and development in support of improved railroad safety and national rail transportation policy; and consolidate government support of rail transportation activities.
GCP	Grade Crossing Predictor – A train detection device used as part of a highway-railroad grade crossing warning system to provide a relatively uniform warning time.
GEO®	Geographic Signaling System - GEO® is a vital microprocessor controlled
GENI (F)	Genisys Field Protocol
GENI (O)	Genisys Office Protocol
GFT	Ground Fault Tester – An optional external device connected to the Echelon LAN that constantly monitors up to two batteries for ground faults and indicates battery status.
GMT	The time as measured on the prime meridian running through Greenwich, England: used in England and as a standard of calculation elsewhere. Also called Greenwich Mean Time, Greenwich Civil Time, Universal Time
GOL	Geographic Object Library
GPS	Global Positioning System

TERM	DESCRIPTION
HMAC	Keyed-Hash Message Authentication Code – A type of message authentication code (MAC) calculated using a specific algorithm involving a cryptographic hash function in combination with a secret key.
HS	Home Signal
Hz	Hertz – Common reference for cycles per second of flashes per second.
Interconnection:	The electrical connection between the railroad active warning system and the traffic signal controller for the purpose of preemption.
IP:	Internet Protocol - ISO Model Layer 3 (network) protocol that performs proper routing of packets.
ITC:	Interoperable Train Control
ITCM:	Interoperable Train Control Message.
Interlocking:	An automatic or manual arrangement of signals and appliances so interconnected that their movements must succeed each other in proper sequence and for which interlocking rules are in effect.
IO or I/O:	Input/Output
kHz:	Kilohertz – 1000 Hz or 1000 cycles per second.
LAN:	Local Area Network – A limited network where the data transfer medium is generally wires or cable.
LCP:	Local Control Panel – A control and display interface device that allows field personnel to perform maintenance and troubleshooting procedures at a location.
LED:	Light-Emitting-Diode - A solid-state indicator.
LIN:	Line - The GEO module used to transmit and receive coded track patterns over cable.
LOD:	Light Out Detector - A device that monitors current flowing in a circuit such as a signal light, switch, etc., for the purpose of detecting a fault condition in the circuit.
LOR:	Lamp Out Relay - A GEO status indication using the DTU or the maintainer's interface that a signal lamp filament has been tested with current and failed.
LUI	Local User Interface – Refers to the character display and keypad on the front panel of Siemens equipment.

TERM	DESCRIPTION
MCF:	Module Configuration File – The site-specific configuration information created by the WCCT and downloaded into the ECD via the CPU II+ and Diagnostic Terminal Utility (DT), or CPU III WebUI.
MEF:	Module Executable File – The executive software running in the CPU. The user can download the MEF through the DTU port to update the software.
Module	Physical package including PCBs and input/output terminals for connecting to external devices and equipment.
NTP	Network Time Protocol – The NTP is a protocol used to synchronize the clocks in millions of servers, workstations, and PCs of the public internet and private networks.
OCG:	Office Communication Gateway
OCE:	Office Configuration Editor – A program used to create configuration package files (PAC files) for iVIU PTC GEO, iVIU, VIU, GEO, CPU III, and GCP equipment.
Out Of Service:	The process for taking one or more pieces of equipment out of service for repair and/or maintenance.
PAC File:	A configuration package File that can either be created in the office using the OCE.
PCB:	Printed Circuit Board
Pick Up Delay:	An internal delay time between when an input receives the signal to pick up and when it actually responds.
PTC:	Positive Train Control – An automated control system for railways that ensures the safe operation of rail vehicles using data communication between various control entities that make up the system.
Reboot	To cause the system to restart by removing power for a few seconds then reapplying power.
RJ-45:	Industry standard Ethernet port
RIO:	Relay Input Output Module
RS232:	Industry standard serial port.
RS-485:	A higher speed version of RS-232 that supports longer distances and multiple devices.
RTU:	Remote Telemetry Unit

TERM	DESCRIPTION
RX:	Receive
RXD:	Receive Data
Serial bus:	The communication path that carries messages between the CPU and I/O modules installed in the GEO chassis. The serial bus is a set of solder runs on the motherboard (backplane) of the chassis.
Signal aspect:	The appearance of a fixed signal conveying an indication as viewed from the direction of an approaching train; the appearance of a cab signal conveying an indication as viewed by an observer in the cab.
SIN:	Site (Subnode) Identification Number - A twelve-digit ATCS address representing the module as a subnode on the network.
SNMP	Simple Network Management Protocol – A simplified version of NTP where storage of state data is not required.
SNTP:	Simple Network Time Protocol - A simplified version of NTP where storage of state data is not required
SSH	Secure Shell – SSH is a network protocol for secure data communication and remote command execution.
TCP/IP Network:	Transmission Control Protocol / Internet Protocol -The suite of communications protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP. TCP/IP is built into the UNIX operating system and is used by the Internet, making it the de facto standard for transmitting data over networks.
Track circuit:	Defined by AREMA as “An electrical circuit of which the rails of a track form a part.” A track circuit’s limits are established by the use of insulated rail joints.
TRK:	Track – The GEO module used to transmit and receive coded track patterns for railroad track circuits.
True RMS AC+DC:	A scale on a multimeter that measures the effective combined AC and DC portions of the total voltage. Used to measure the pulsed output of a crossing controller. Measured as VRMS.
TSR:	Temporary Speed Restriction
TX:	Transmit
TXD:	Transmit Data

TERM	DESCRIPTION
UAX:	Acronym for Upstream Adjacent Crossing (Xing). UAX inputs are used to receive prediction information from an upstream GCP as inputs to a downstream GCP when insulated joints are in the approach circuit.
UCN:	Unique Check Number – A number is used to detect file corruption.
UDP:	User Datagram Protocol - A transport protocol used primarily for the transmission of network management information. Not as reliable as TCP.
ULCP:	Universal Local Control Panel – Same as LCP.
USB Port:	Universal Serial Bus Port
USB Drive:	Types of memory devices that plug into a USB port. These devices are commonly called flash drives or memory sticks.
UTC:	Coordinated Universal Time
VHF Communicator:	Communications device used for remote operations and calibration as well as data communications.
VIU:	Vital Interface Unit - A device that monitors switch positions and signal aspects and then generates vital status messages reflecting the current state of the monitored equipment.
VLAN:	Virtual Local Area Network
VLO:	Vital Lamp Output – A software-driven vital hardware output which drives a lamp on a Colorlight Signal to display a commanded aspect and verifies the lamp is operational (not shorted or out).
VLP:	Vital Logic Processor -- The processor mounted on the CPU module that is responsible for vital processing.
VPI:	Vital Parallel Input – A vital input to a module, designed primarily to read the state of a vital signaling relay.
VRMS	Volt Root Mean Square – See True RMS AC + DC above.
VTP:	Virtual Local Area Network (VLAN) Trunk Protocol. A Cisco proprietary Layer 2 messaging protocol that manages the addition, deletion, and renaming of VLANs on a network-wide basis. VTP reduces administration in a switched network. When you configure a new VLAN on one VTP server, the VLAN is distributed through all switches in the domain. This reduces the need to configure the same VLAN everywhere.
WAMS:	Wayside Alarm Management System – An office based application that communicates with and receives data from specially equipped crossings.

TERM	DESCRIPTION
WCC/FPD:	Wayside Cluster Controller/Field Protocol Device. The WCC/FPD is often referred to as the packet Switch. This equipment manages clusters of base stations and other communications links to the field. The WCC/FPD is installed in the office.
WCCMaint:	Software that runs on a PC used to configure and manage a network of WCC/FPD equipment. WCCMaint is often used to manage other communications equipment as well such as WCPs and BCPs.
WIU:	Wayside Interface Unit. Term used to refer to the VIU in PTC applications.
WSM:	Wayside Status Messages. Messages in EMP format reflecting the status of vital functions at a wayside location. These vital functions include signal aspects and switch positions.

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SECTION 1 GENERAL DESCRIPTION

1.0 INTRODUCTION

1.1 GENERAL

The Office Configuration Editor (OCE) provides a means for users to create application configurations in the office for the following products when not directly connected to the equipment:

- GEO
- VIU
- IVIU and PTC Console
- WayConneX using CPU III
- GCP4000
- GCP5000
- GCP3000+
- SGCP4000/MS4000

The configuration parameters can be set in the OCE and then the files created can be copied to a USB drive or laptop computer and uploaded in the field via the USB or Web UI, as appropriate.

For GEO/WayConneX/VIU applications, the OCE calculates the UCN (Unique Check Number).

If the location is PTC enabled, the OCE calculates the PTC UCN (WIU Config CRC) and creates the WIU Config xml.

The OCE generates configuration reports detailing the parameters set by the user.

The OCE provides the ability to create the configuration when the iVIU or PTC Console is used to PTC-enable GEO installations. When used for PTC-enabling of GEO installations, the OCE reads information from a master PTC database containing the details of the GEO MCFs. This allows the OCE to automatically populate many MCF configuration items. An approved master PTC GEO database will be supplied by Siemens Application Engineering.

For GCP applications, the OCE creates the PAC file that can be loaded into the GCP, and calculates the OCCN (Office Configuration Check Number).

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SECTION 2 SOFTWARE INSTALLATION

2.0 SOFTWARE INSTALLATION

2.1 PREREQUISITE INSTALLATION

Prior to installing the OCE software, it will be necessary to install the following software:

- Microsoft® DotNet Framework 4.6 (the OCE installation will install the .NET framework if not already installed).

The OCE 2.6.3 is compatible with Windows 7 and 10 on 32 or 64 bit machines. The OCE 2.6.3 is not compatible with Windows XP.

The OCE 2.6.3 is compatible with the following browsers:

- Mozilla Firefox
- Google Chrome
- Internet Explorer 11

2.2 OCE INSTALLATION

An installation wizard will direct the OCE installation. It is recommended to use the default directories if possible. Use the following procedure to install OCE:

1. Click on the Setup.exe icon to start the installation wizard. Click **Next** on the welcome screen to continue.

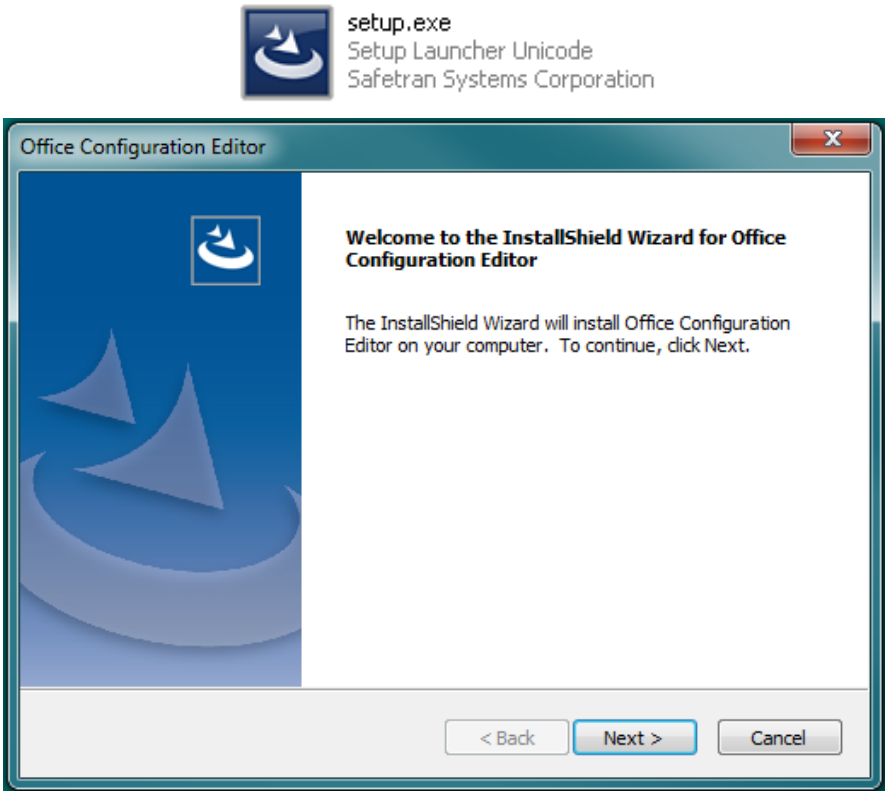

Figure 2-1 OCE Setup Wizard

2. Click on the **Yes** button to accept the licensing agreement and to continue.

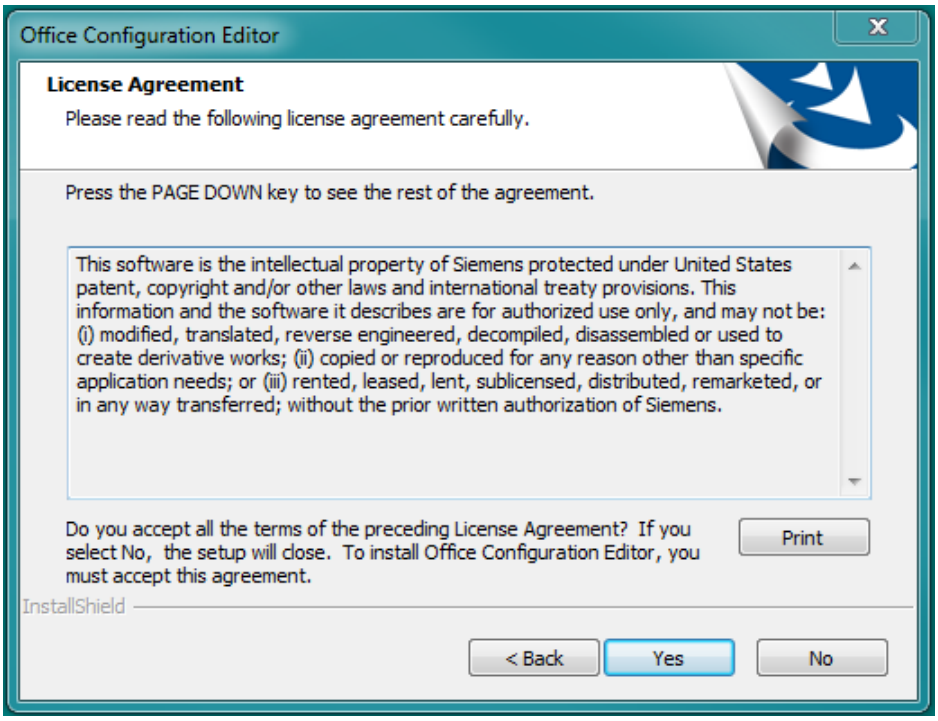

Figure 2-2 OCE License Agreement

3. The Wizard will continue installing the OCE. Click the **Next** button to continue.

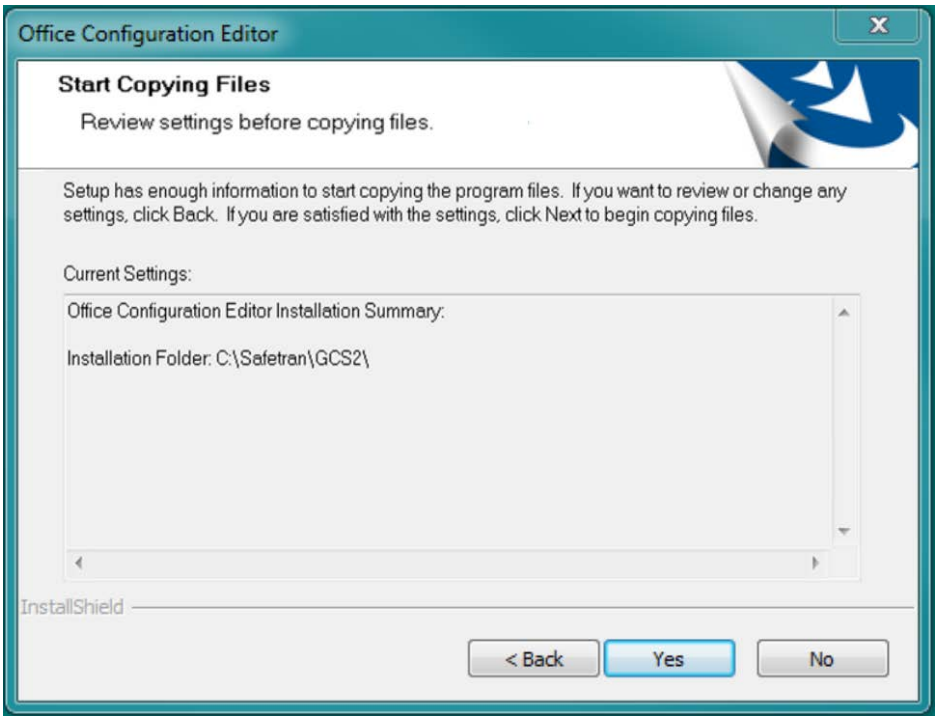

Figure 2-3 OCE Installation Folder

4. The OCE program is ready to install. Verify the installation settings and click **Install** to complete the installation or click **Back** to make any changes.

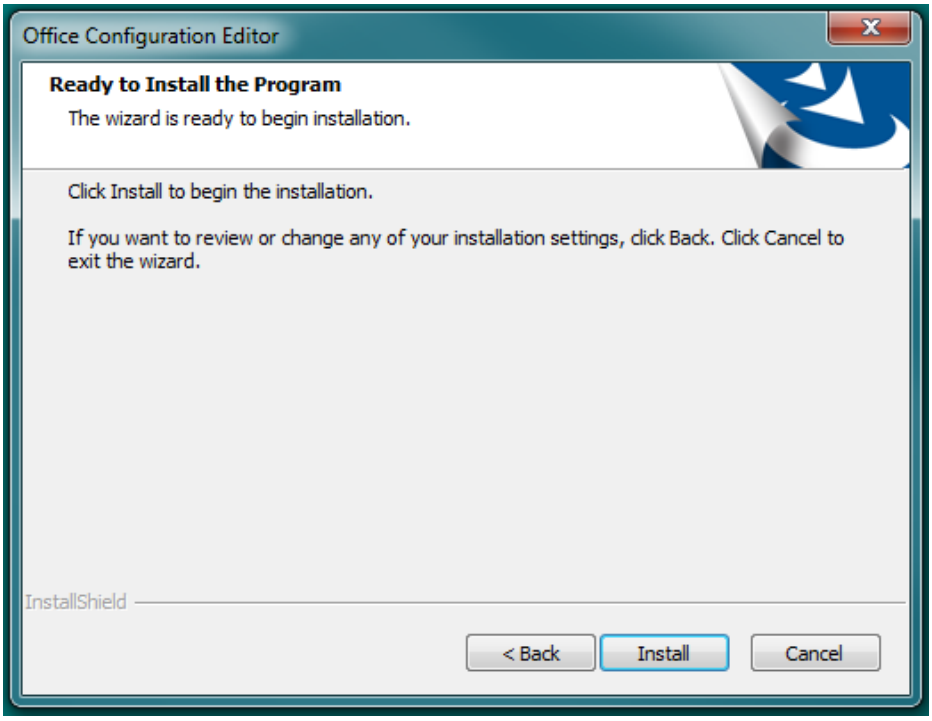

Figure 2-4 Begin Installation

5. The Wizard will install the OCE files. A progress bar will display the progress of the installation.

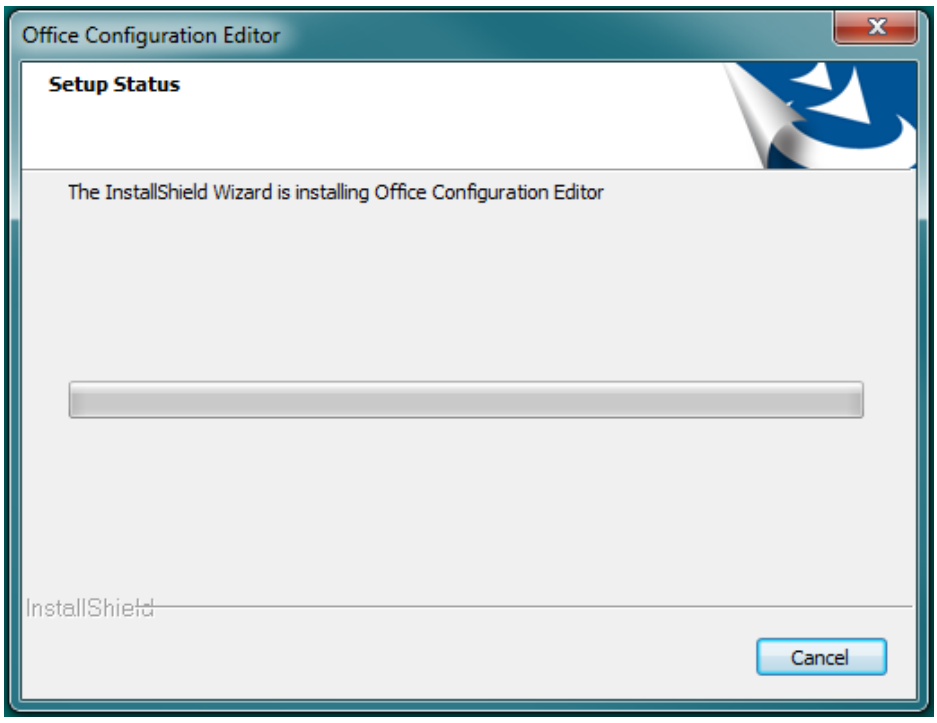

Figure 2-5 OCE File Installation

6. Office Configuration Editor is now installed. The computer must be restarted prior to using the OCE.

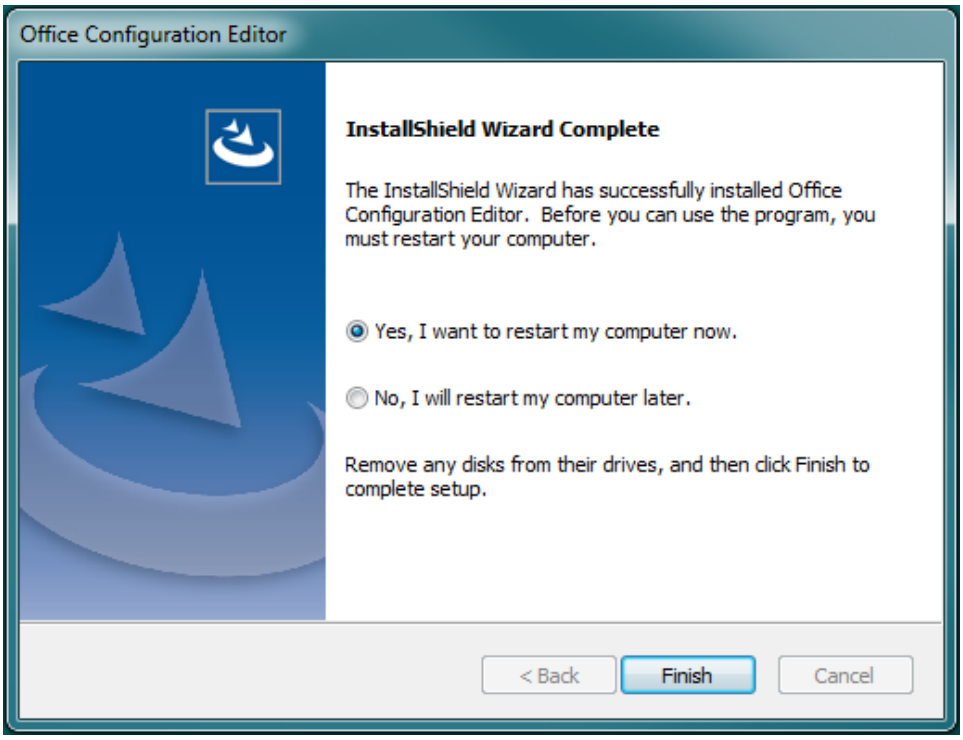

Figure 2-6 Finish OCE Installation

NOTE

NOTE

It is necessary to restart the computer before using the OCE program.

SECTION 3 OPERATION

3.0 OPERATION

3.1 STARTING THE OCE

1. Click on the OCE Server.bat icon on the desktop screen to start the OCE program.

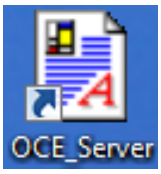

Figure 3-1 Desktop Icon

2. A command prompt screen will appear displaying the starting of the OCE Mongrel server. The server will operate in the background.

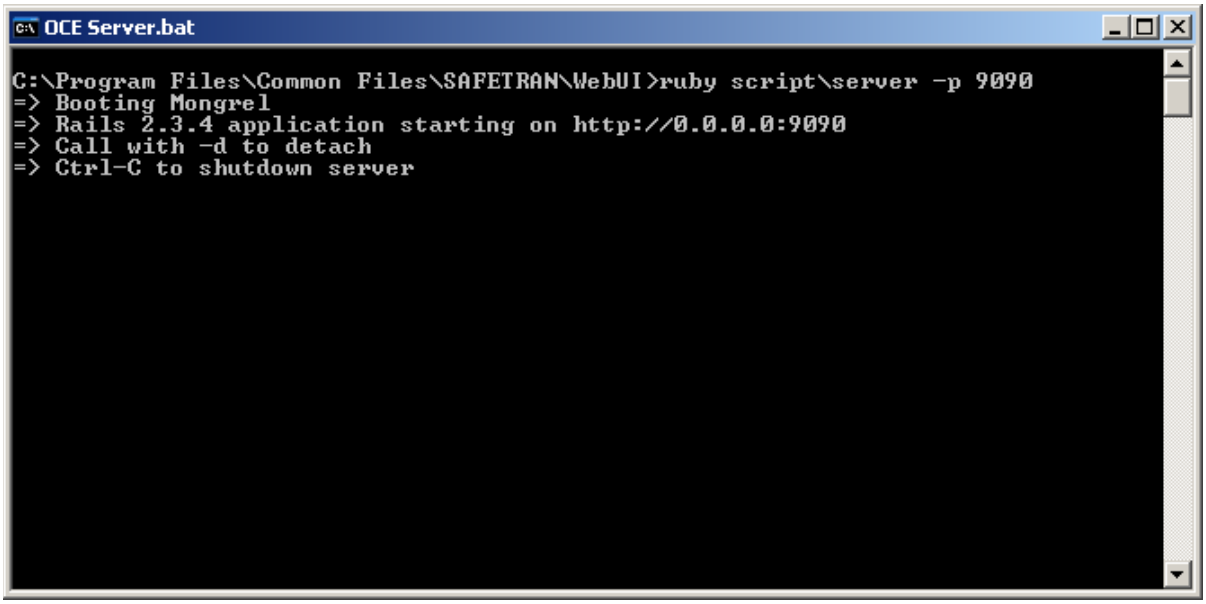

Figure 3-2 Mongrel Server Boot up

3. Open an internet browser (Internet Explorer, Firefox, Chrome, etc.) and enter **"http://localhost:9090/"** in the browser's URL text box and press ENTER to open the WebUI Screen

Figure 3-3 OCE URL

4. The Siemens WebUI screen will appear. Select the User Name **admin** and enter the assigned password (default is Siemens).

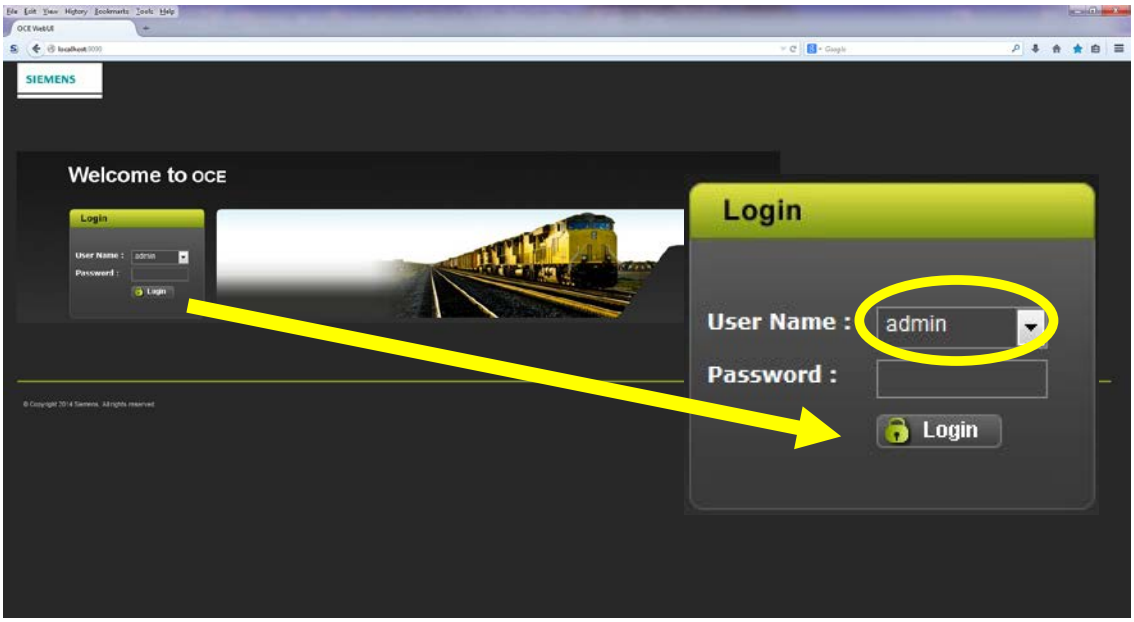

Figure 3-4 Login Page

3.2 INITIAL OCE SETUP

Depending on the type of configurations to be created, the OCE may need to be set up before it can be used for the first time. For GEO, iVIU, VIU, and WC CPU III configurations, no specific setup is generally needed. For GCP sites and iVIU PTC GEO, see the instructions in the following sections.

The user may find it convenient to set up templates for different applications so that a common set of railroad-specific defaults can be used. For GCP 4000 and 5000 templates, see Section 4.5.3; for all other template see Section 4.5.4.

3.2.1 OCE Setup for iVIU PTC GEO

For an iVIU PTC GEO configuration, a master PTC database is required. The OCE installation does not include master databases as these are customer specific. These are supplied by Siemens as a customer-specific ZIP file which is imported into OCE.

3.2.1.1 Installation of Databases and MCFs

To install the databases / MCFs, go to the Maintenance / File Manager screen and select **Import Files**, then use **Browse** to select the customer-specific ZIP file provided by Siemens as shown below.

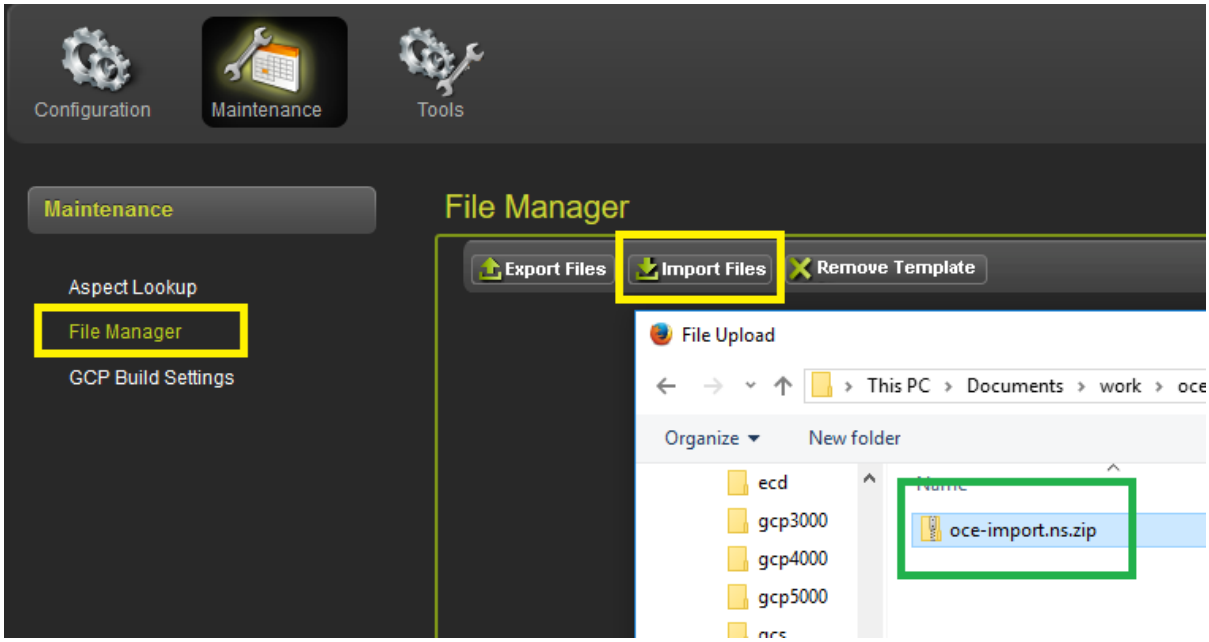

Figure 3-5 Selecting to Import PTC Database and MCF

The OCE will indicate which of the files are imported successfully, (as shown below). If a file already exists, the choice of whether to overwrite it or not will appear. The imported ZIP file will also contain files called: AspectLookupTable.rr.x.txt and PTCAspectValues.rr.x.txt where rr is the railroad and x is a version number.

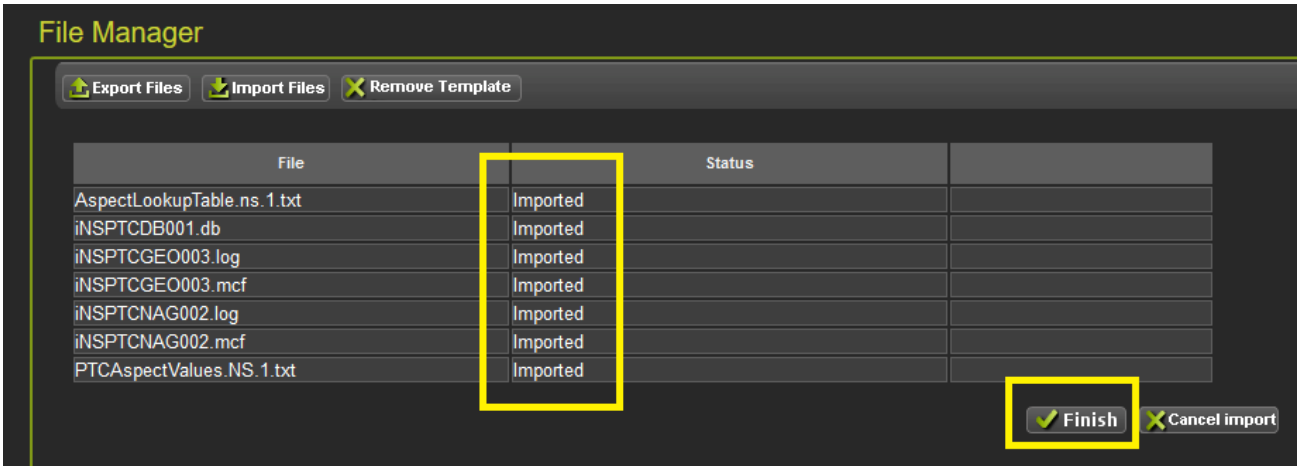

Figure 3-6 Importing PTC Database and MCF

3.2.1.2 Aspect Lookup Table/PTC Aspect Values

The AspectLookupTable file contains a list of Aspect names as found in the GEO GC files and a mapping of the PTC aspect names that correspond to the GEO names. The PTCAspectValues file contains a list of the PTC aspects and the values of the PTC code associated with each aspect. These files must not be edited. The OCE allows them to be updated independently from the actual OCE source code as the AspectLookupTable file is railroad specific.

When the ZIP file is installed, the version of the AspectLookupTable.rr.x.txt and PTCAspectValues.rr.x.txt will be made the current file to use. If there are multiple copies in the ZIP file, the latest version will be made the current one. If, in the future, there are multiple versions of any of these files, the user can go to the Maintenance / Aspect Lookup screen and select the version to use.

The user should go to the Aspect Lookup menu and ensure that the latest version for the correct railroad is selected. Press the **Save** button to save the changes if different files are chosen.

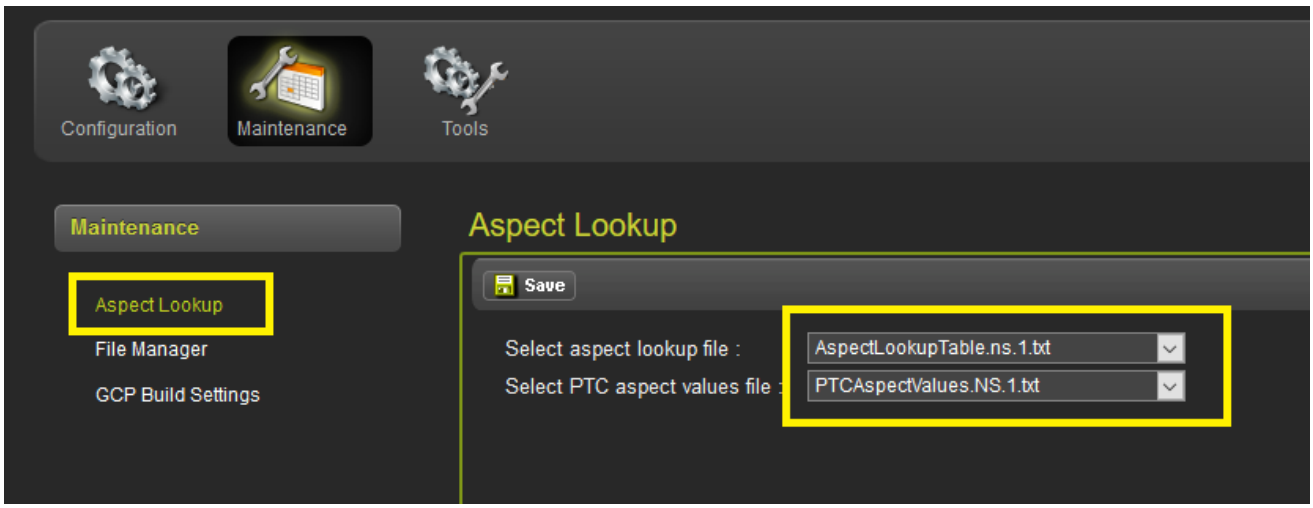

Figure 3-7 Aspect Lookup

3.2.2 OCE Setup for GCP

If the OCE is going to be used to create GCP sites, first go to the Maintenance / GCP Build Settings menu. From here, enter the Output Build path (shown in the green box below). This is the path where the output files (ZIP file, PAC file, reports) will be stored when a GCP site is built. To fill out this field, it is recommended to cut and paste the file path from Windows explorer rather than typing it out. If the user does not set up a specific path for the OCE, it will create a default workspace located here: C:\Siemens\oce\workspace.

NOTE

NOTE

Each time a new version of the OCE is installed it will revert back to the default workspace location. If a custom workspace is required it will need to be set anytime a new version of the OCE is installed.

Select the check boxes, shown in blue below, to configure which reports will be included in the installation ZIP file that is created when the GCP configuration is built.

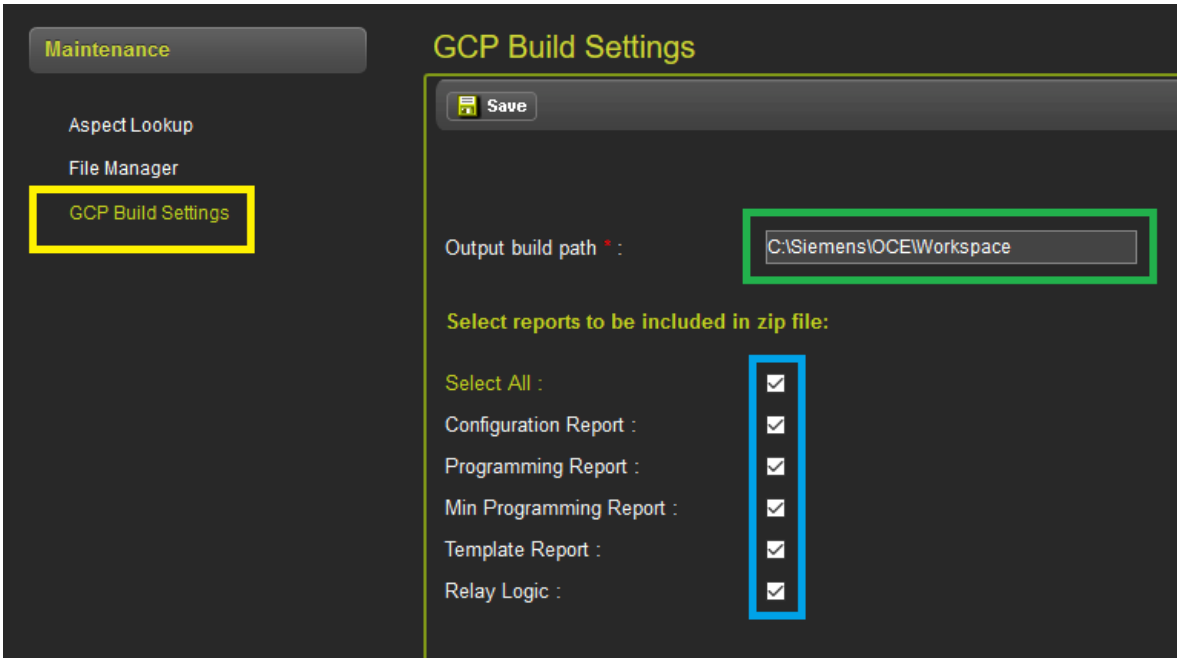

Figure 3-8 GCP Build Settings

3.2.3 Replicating an OCE Installation

If the OCE is already installed on one PC with all the correct files and the user wants to install a copy of the OCE on another PC and set it up with all the same files, use the following procedure:

1. Go to the Maintenance / File Manager screen and select the Export Files option. The web Browser will allow the file to be saved, the exact manner depends on the web browser used.

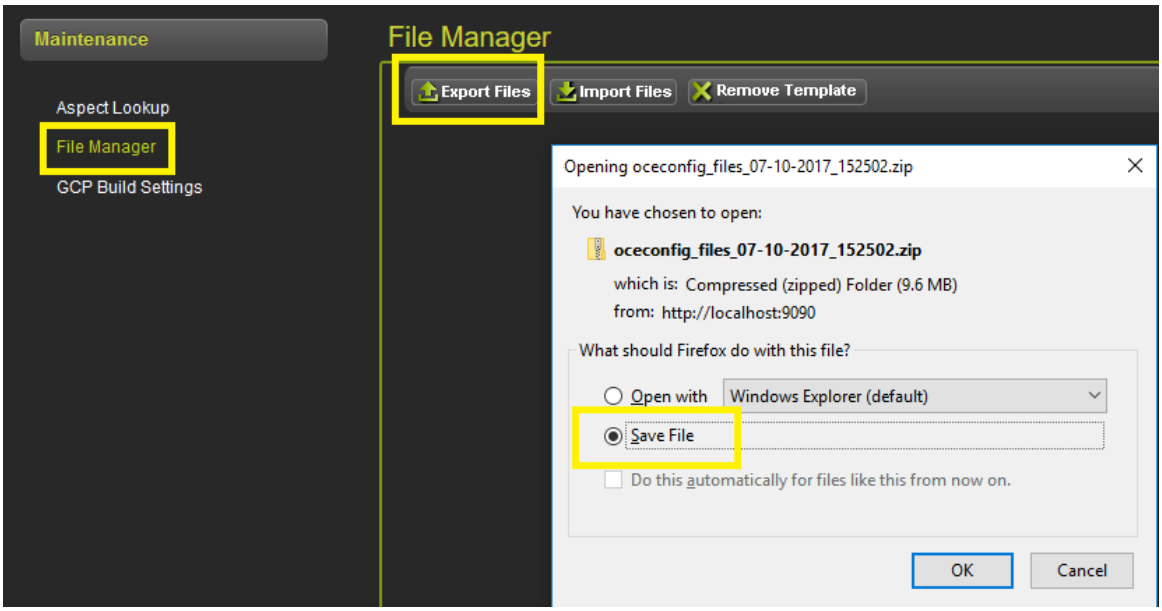

Figure 3-9 File Manager Export

2. This will create a ZIP file containing all the MCFs, templates and files for PTC GEO (master databases and lookup files). Copy this file over to the second PC.
3. Next, install the OCE on the second PC (See Section 2.0 for details).
4. Go to the Maintenance / File Manager and select **Import Files** and then select the ZIP file exported from the first PC. This will install all the MCFs, templates, and PTC related files on the second PC. The OCE may give warnings if the files already exist on the new PC.

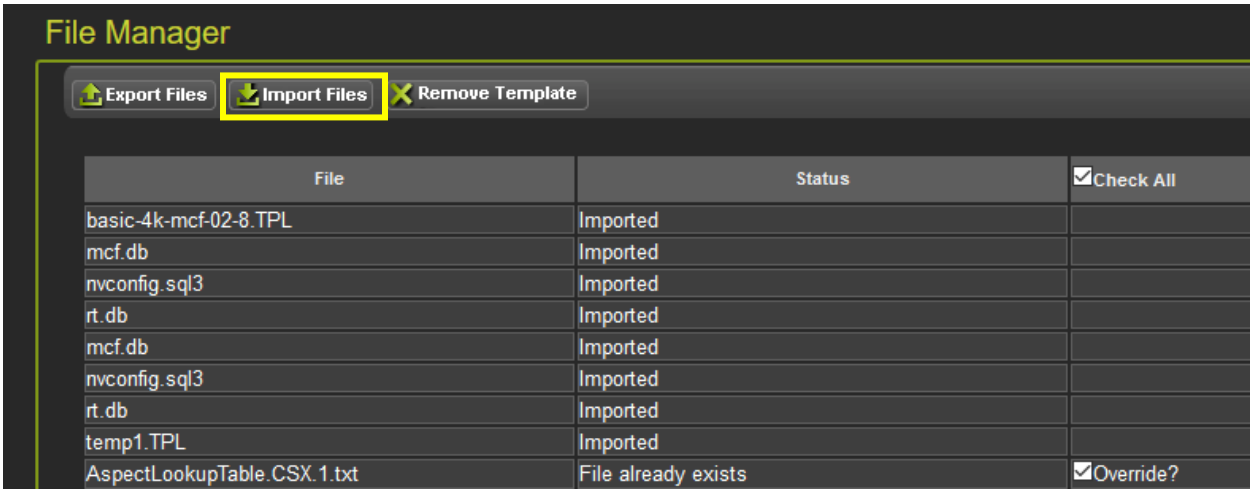

Figure 3-10 File Manager Import

NOTE

Copying the OCE will not transfer specific site information from the original file on the first PC to the second PC, it will be necessary to enter the site information during the configuration process.

3.2.4 Using Templates

The OCE allows the user to create template files for different types of sites. By using a template, the railroad can create their own set of default values to be used across applications for a certain site type, rather than having to set the values specifically for each site created in the OCE.

For the 3000+, 4000, and 5000 GCPs, a template allows vital (MCF parameters) and non-vital configuration to be set in the template. See section 4.5.3 for details of GCP templates.

For sites other than the 3000+, 4000, and 5000 GCPs, the OCE allows the user to create a template for the non-vital configuration portion only. This template will only include the railroad-specific defaults for the non-vital configuration parameters. A separate template can be created for iVIU, iVIU PTC GEO, VIU or WC CPU III Sites. Since GEO sites do not have non-vital configuration parameters, there is no template for them.

1. To create a template, first create a site of the desired type (iVIU, iVIU PTC GEO, VIU or WC CPU III) see Sections, 4.1, 4.2, 4.3, and 4.4.
2. Next, enter the values for the non-vital configuration parameters that are required as defaults for all sites of this type.
3. Then go to the Manage Site button and select **Set Template**. This will save the non-vital configuration data base file containing the defaults that were set as a template.

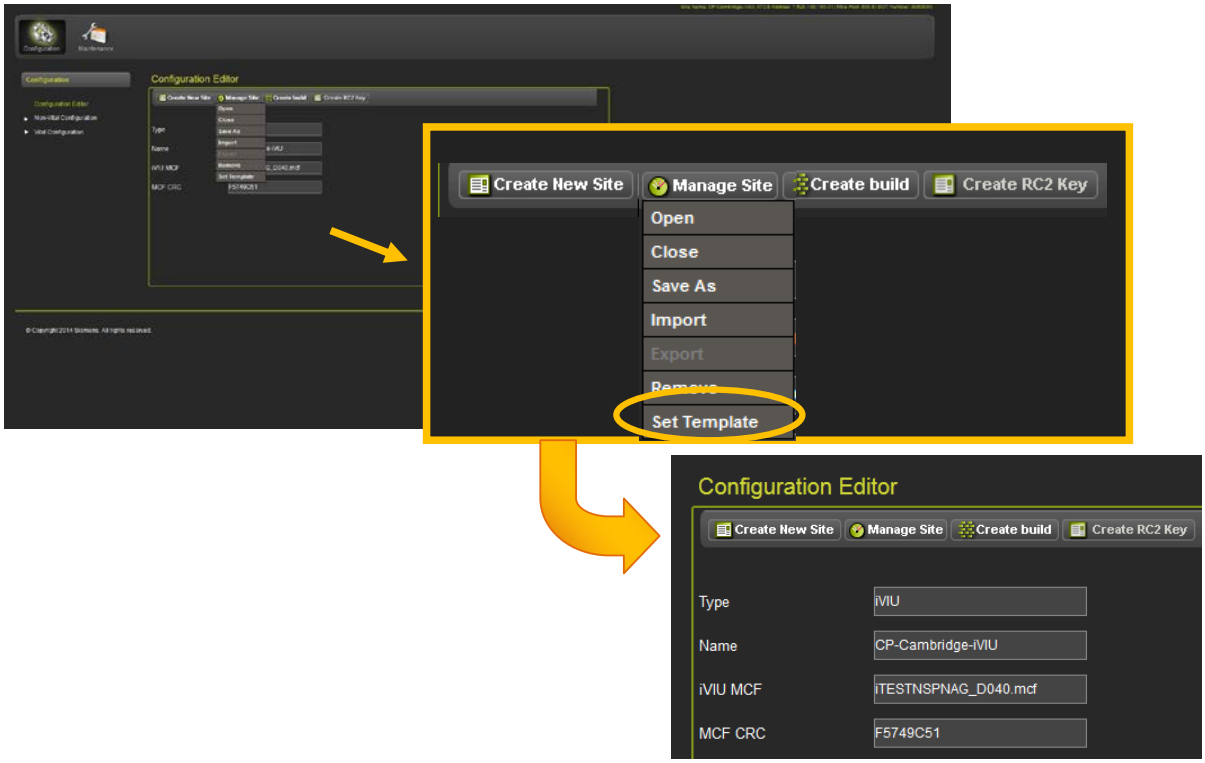

Figure 3-11 Manage Site - Creating a Template

Whenever a new site is created of this type, the template's non-vital configuration database file will be used. The OCE will indicate that it is using a template by showing **Template used** on the Configuration Editor Screen when the site is first created as shown in the figure below.

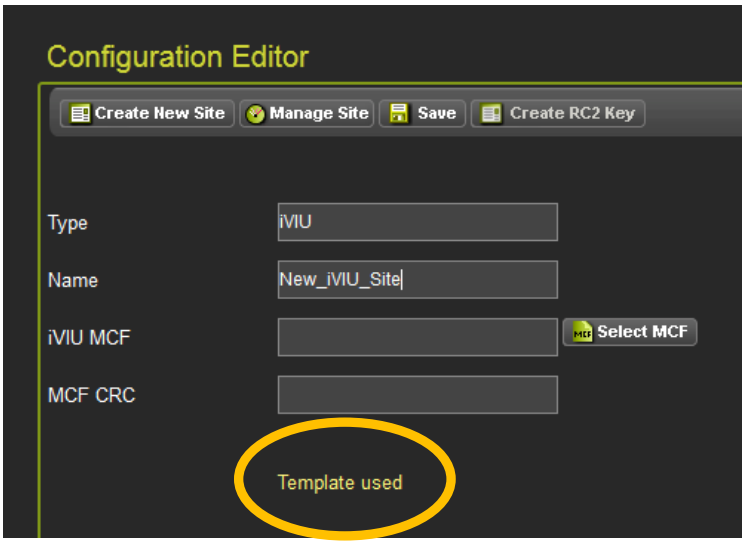

Figure 3-12 New iVIU Site Using a Template

If the template needs to be updated, create a site that uses the template, update the non-vital configuration parameters, then select Manage Site / Set Template (as shown below) to save it.

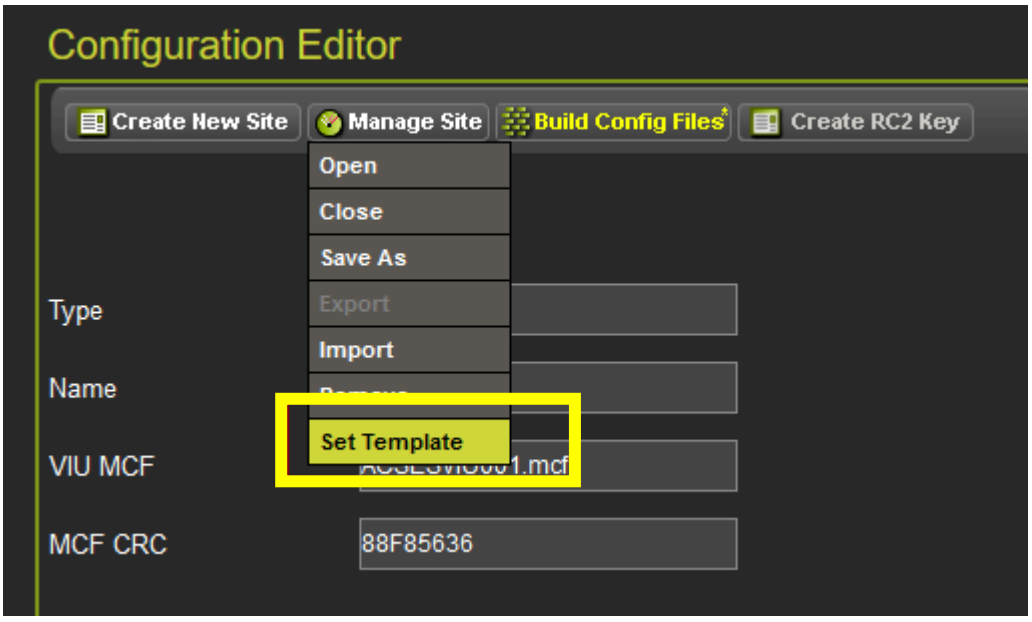

Figure 3-13 Set Template

If the template values are not required for a particular site, selecting the **Set to Default** function will restore the actual default values, rather than using the values from the template (See Figure 3-30).

If the template is no longer required, go to Maintenance / File Manager and select the **Remove Template** button and then select which template is to be removed as shown below.

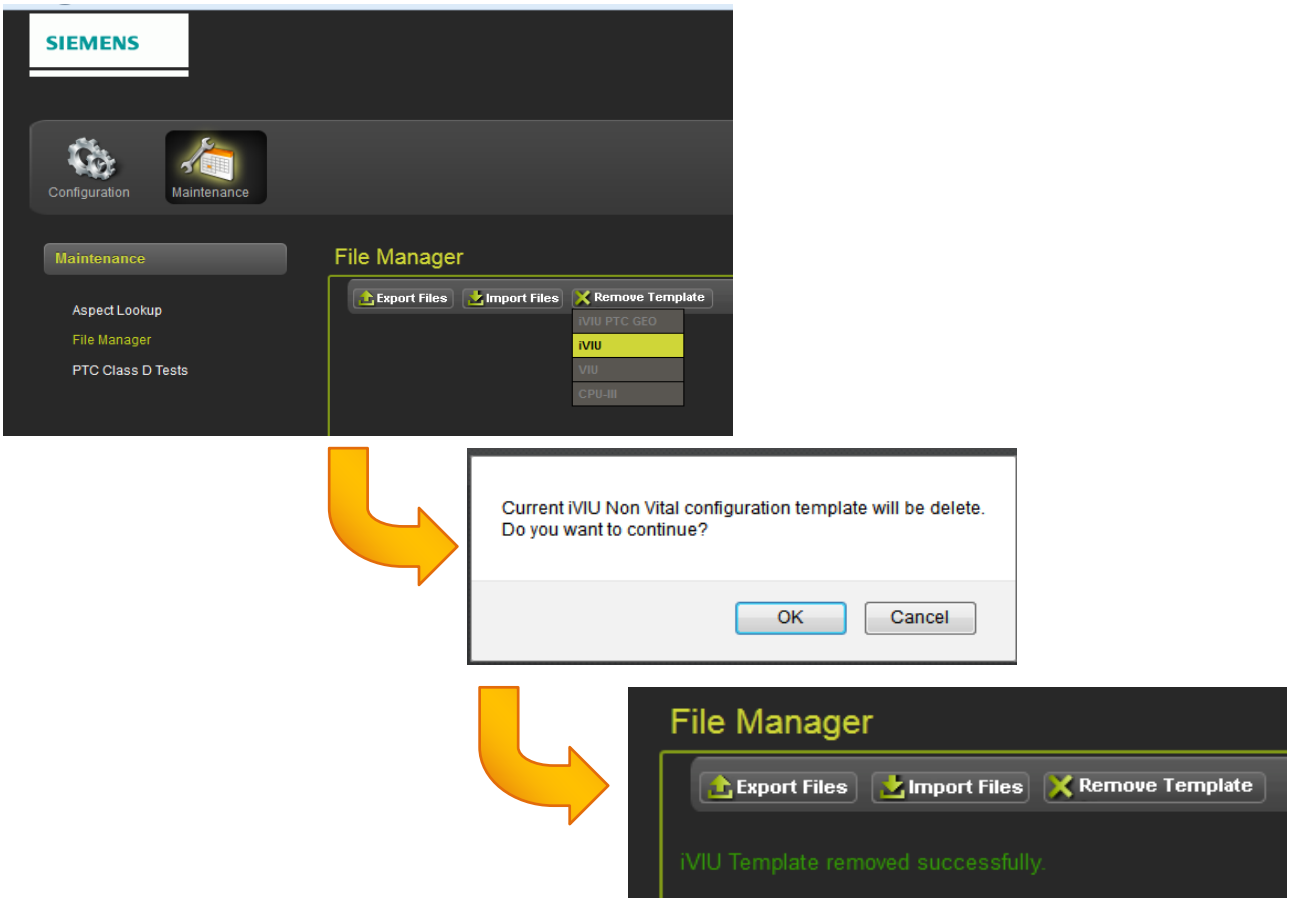

Figure 3-14 Removing a Template

Since a template file is likely to be needed by multiple users, the templates created on one PC may be copied to other machines. To do this, either copy the files directly from Windows explorer on one PC to the other (the template files are stored in a subfolder under: C:\Program Files (x86)\Common Files\SIEMENS\WebUI\oce_configuration\templates\) or go to the File Manager screen, export the files, and import the ZIP file into the second machine. See section 6.1.2 for more details.

3.2.5 OCE File Structure

It may occasionally be useful to know where the OCE files are on the PC. The following assumes the OCE is installed in its normal default folder of C:\Program Files\Common Files\Siemens.

When the user creates a site, a folder for the site is created under:

C:\Program Files\Common Files\Siemens\WebUI\oce_configuration\admin

Master Database is in:

C:\Program Files\Common Files\Siemens\WebUI\Masterdb

The AspectLookupTable.rr.x.txt and PTCAspectValues.rr.x.txt used for iVIUPTC GEO sites are in:

C:\Program Files\Common Files\Siemens\WebUI\doc\geo_aspects

C:\Program Files\Common Files\Siemens\WebUI\doc\ptc_aspects

The MCF files are kept under a specific folder for each site type:

C:\Program Files\Common Files\Siemens\WebUI\oce_configuration\mcf\gcp

C:\Program Files\Common Files\Siemens\WebUI\oce_configuration\mcf\viu

C:\Program Files\Common Files\Siemens\WebUI\oce_configuration\mcf\iviu

C:\Program Files\Common Files\Siemens\WebUI\oce_configuration\mcf\geo

C:\Program Files\Common Files\Siemens\WebUI\oce_configuration\mcf\CPU III

The templates files are kept under a specific folder for each site type:

C:\Program Files\Common Files\Siemens\WebUI\oce_configuration\templates\viu

C:\Program Files\Common Files\Siemens\WebUI\oce_configuration\templates\iviu

C:\Program Files\Common Files\Siemens\WebUI\oce_configuration\templates\iviu ptc geo

NOTE

NOTE

The folder paths listed above are used by 32-bit Windows machines. When a 64-bit machine is used the path will include ‘(x86)’ as shown in the following example:

C:\Program Files (x86)\Common Files\Siemens…

3.3 CONFIGURATION EDITOR

After logging into the OCE, the main screen opens with the Configuration Editor screen. There are three choices listed: Create New Site, Manage Site, and Create RC2Key.

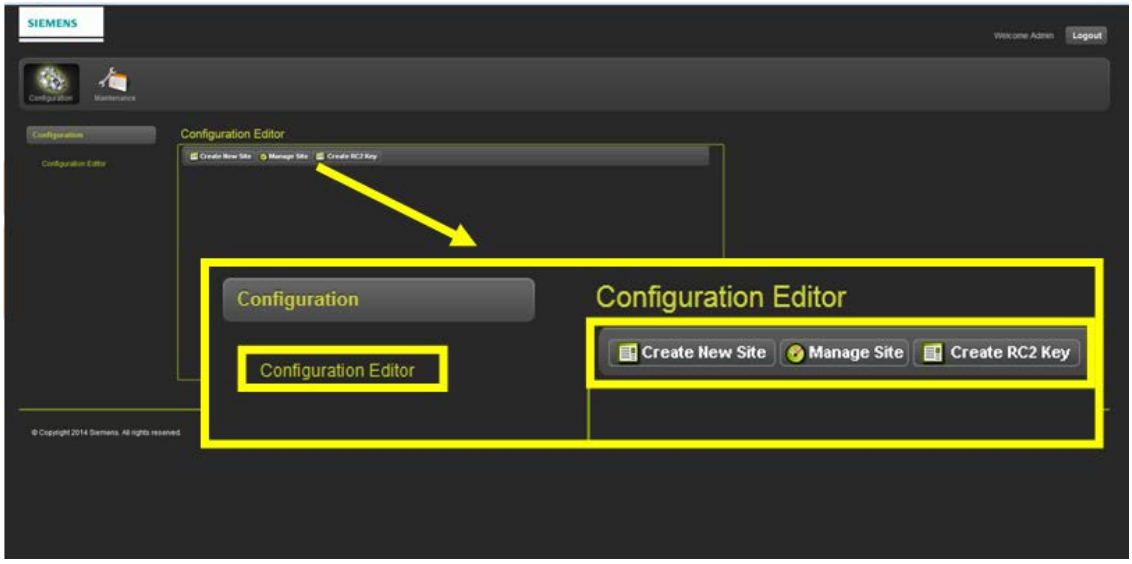

Figure 3-15 Configuration Editor Opening Screen

3.3.1 Create New Site Overview

Create New Site is the starting point of creating a brand new installation. The following selections are available for site creation:

- iVIU PTC GEO
- iVIU
- VIU
- GEO
- GCP
- WC (WayConneX) CPU III

iVIU PTC GEO is used to create the configuration for the iVIU or PTC Console to PTC Enable an existing GEO location.

iVIU is used when the iVIU Console or PTC Console is used in a stand-alone application.

VIU is used to create the configuration for VIU devices (e.g. VIU 20, VIU 20e VIU 16i/8i, VIU-CAT).

GEO is used to obtain the UCN for a specific GEO location and obtain the Configuration Report containing the site configuration settings.

NOTE

NOTE

The OCE 2.6.3 does not support the older, Non-Appliance Model GEO applications.

GCP is used to create the configuration for GCP4000, GCP5000, GCP3000+, or SGCP4000/MS4000 locations.

WC CPU III is used to create MCF configurations for WayConneX CPU III based applications.

Detailed information for creating a site of each specific application type is found in Section 4.0.

3.3.2 Manage Site Overview

Manage Site is used when you want to perform operations on a previously created site.

Manage Site has the following options:

- Open
- Close
- Save As
- Export
- Import
- Remove

Open is used to open a site that has previously been created.

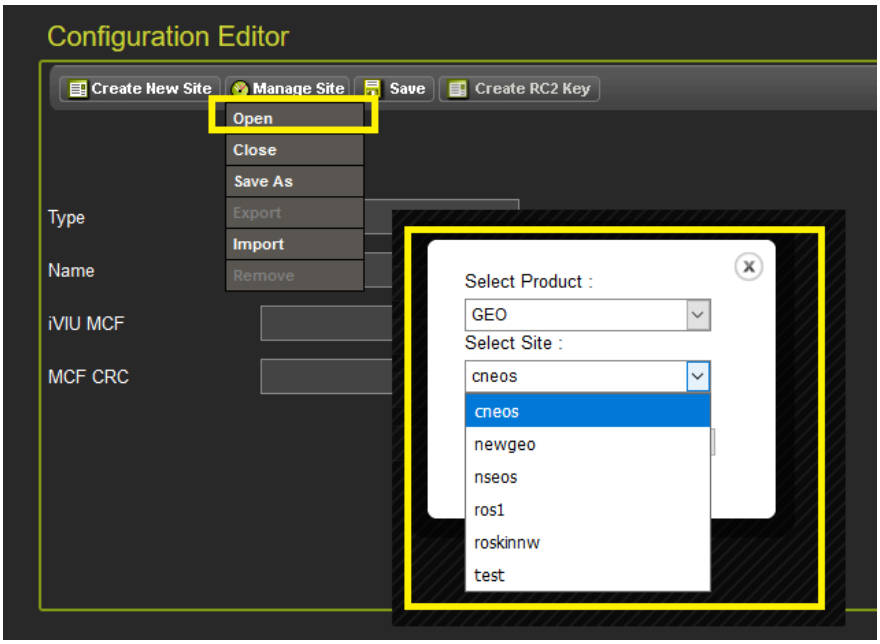

Figure 3-16 Manage Site 'Open' Menu

Close is used to close the site that is currently open in the OCE.

Save As is used to make a copy of the currently open site with a new name.

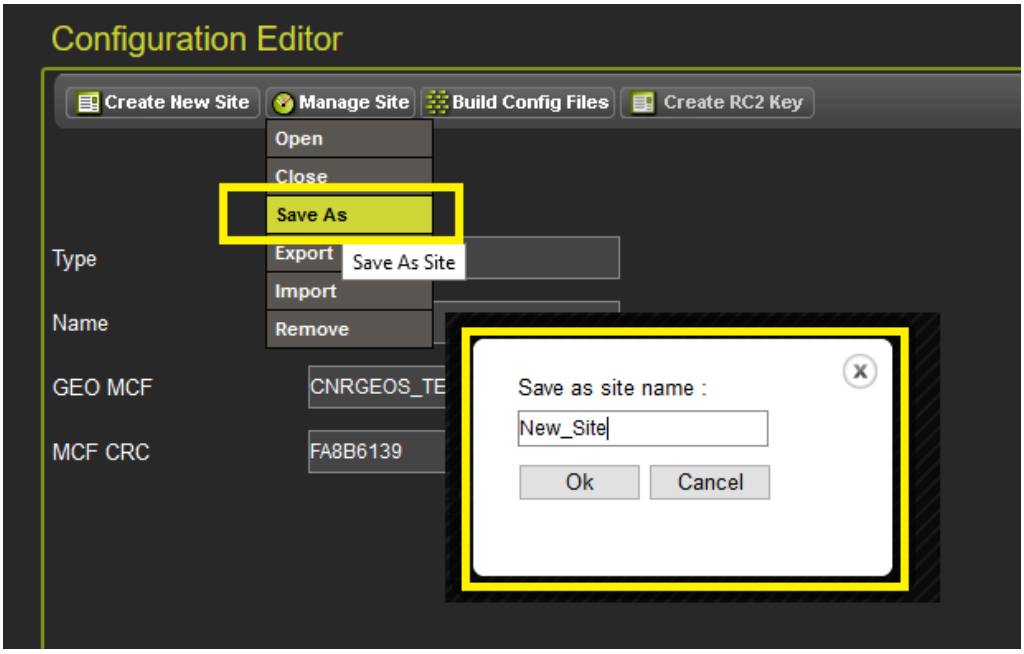

Figure 3-17 Manage Site 'Save As' Menu

Export is used to create a ZIP file of the currently open site which contains all the site files, so that is can be copied to a new machine or installed in the field. Because the OCE is a Web/Server type application, when a file is downloaded, it will be saved in the default path set for the type of web browser being used.

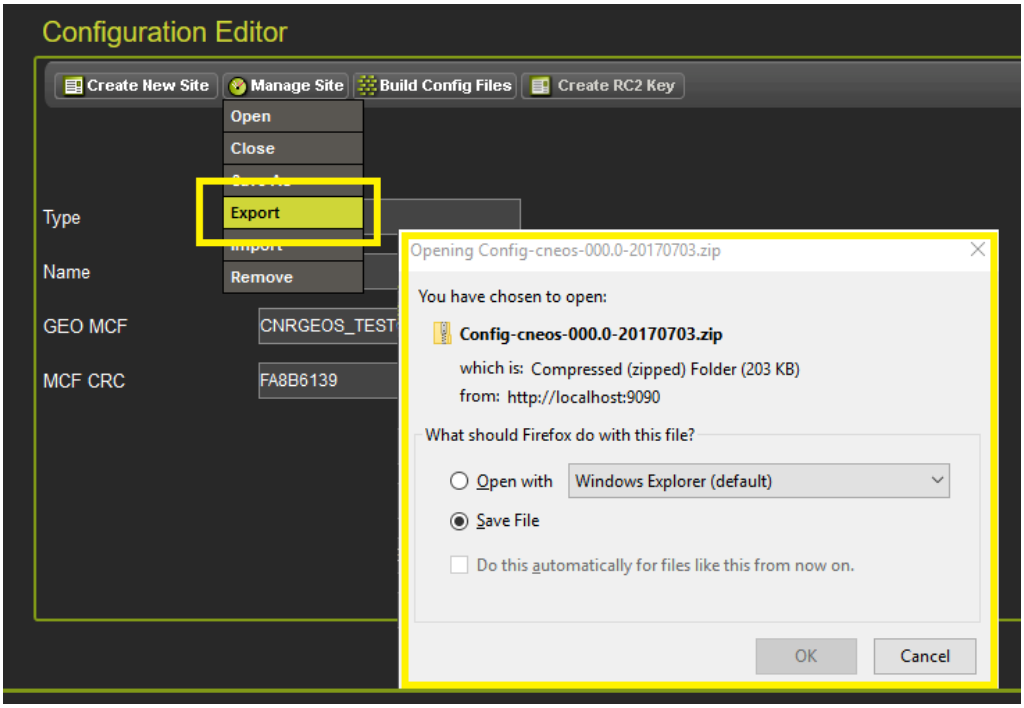

Figure 3-18 Manage Site 'Export' Menu

Import is used to create a new site from a ZIP file copied to an external source (i.e. another PC, exported from another site, etc.). Select **Browse** on the Import File window to select the ZIP file to be imported.

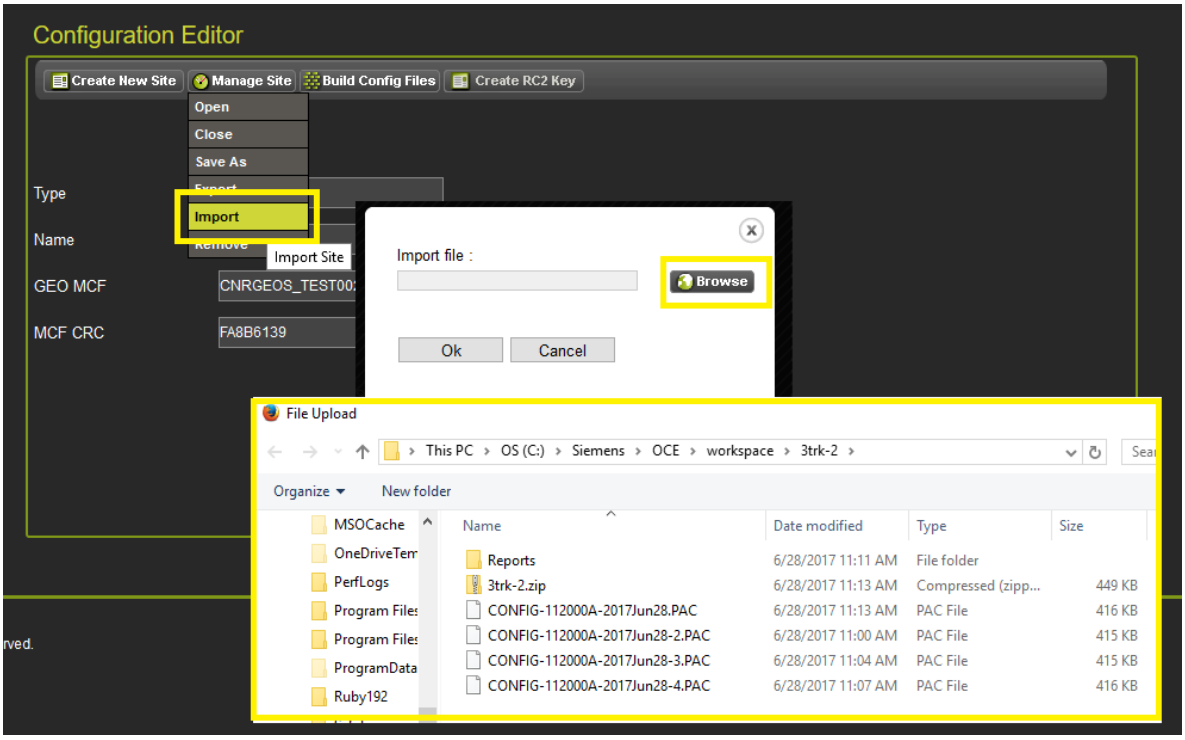

Figure 3-19 Manage Site 'Import' Menu

Remove is used to delete all the files for the currently open site. When **Remove** is selected the OCE will ask for confirmation before the site is deleted.

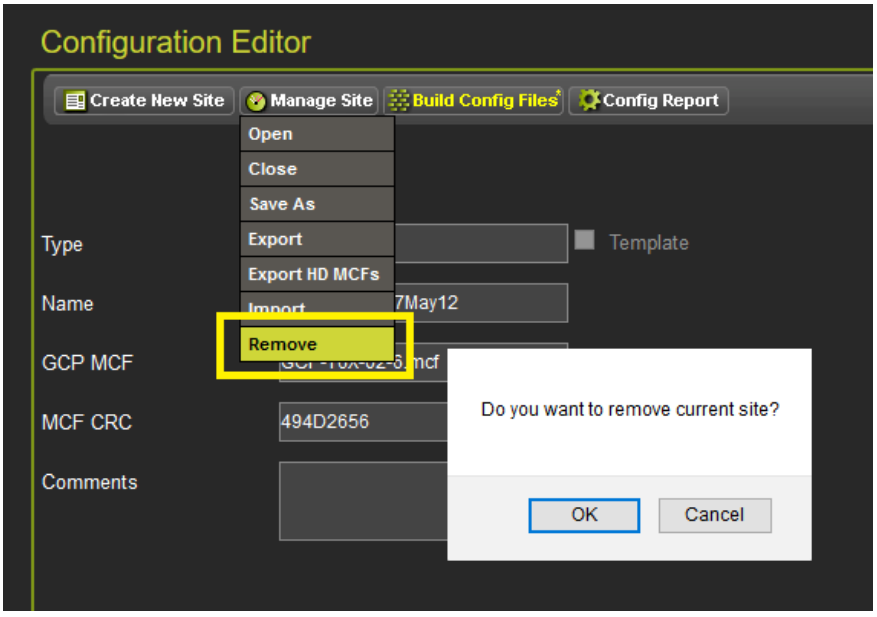

Figure 3-20 Manage Site 'Remove' Menu

3.3.3 Create an RC2Key File

The OCE can be used to create a file containing the RC2Key used in PTC applications. This function is available without having to create configurations for a specific site; hence it could be used by separate personnel in the railroad, so that the designers creating specific configurations do not need to know the specific RC2Keys being used.

Click on the **Configuration** icon and select the **Create RC2Key** button.

Figure 3-21 Create RC2Key

Then enter the desired RC2Key and re-enter in the confirmation box as shown below.

After entering the RC2Key, press the **Create RC2Key File** button. The OCE will indicate success, and will show the CRC of the RC2Key file.

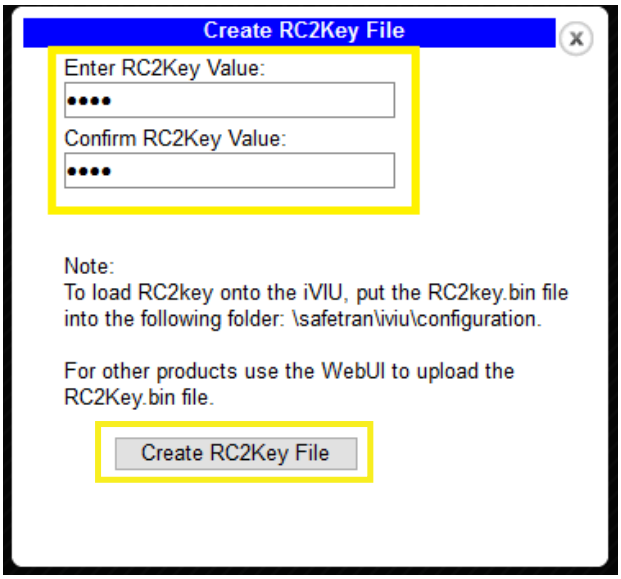

Figure 3-22 Creating an RC2Key

This CRC can be used to identify that the correct file is being loaded into the box, or listed on the plans, etc. without having to disclose the actual RC2key value. Select the download button to save the file. To change the value in this file, enter a new RC2Key and press update.

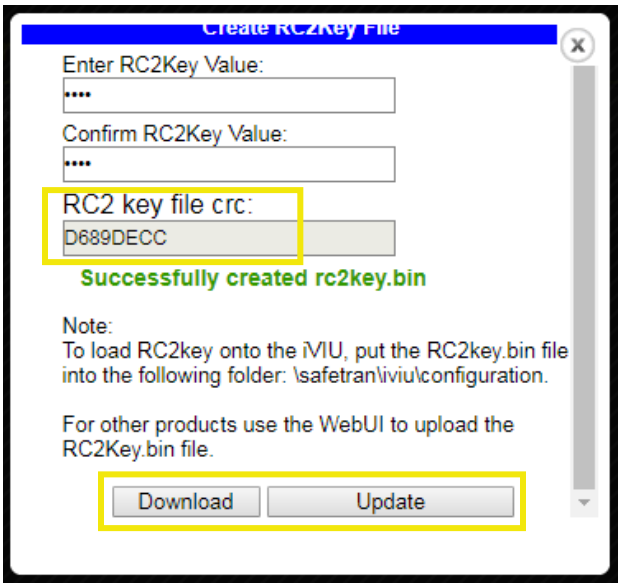

Figure 3-23 RC2Key CRC

If the RC2Key file is opened in the text editor, the CRC of the file is visible. The actual RC2Key is kept in encrypted format in the file so it cannot be read.

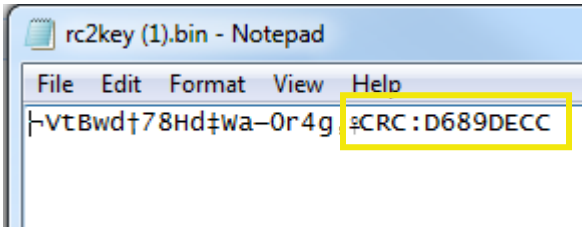

Figure 3-24 RC2Key.bin CRC

3.3.4 Non-Vital Configuration

This section describes common features of the non-vital configuration menu that are available for the iVIU PTC GEO, iVIU, VIU and WC CPU III. For GCP see section 4.5.1.2.

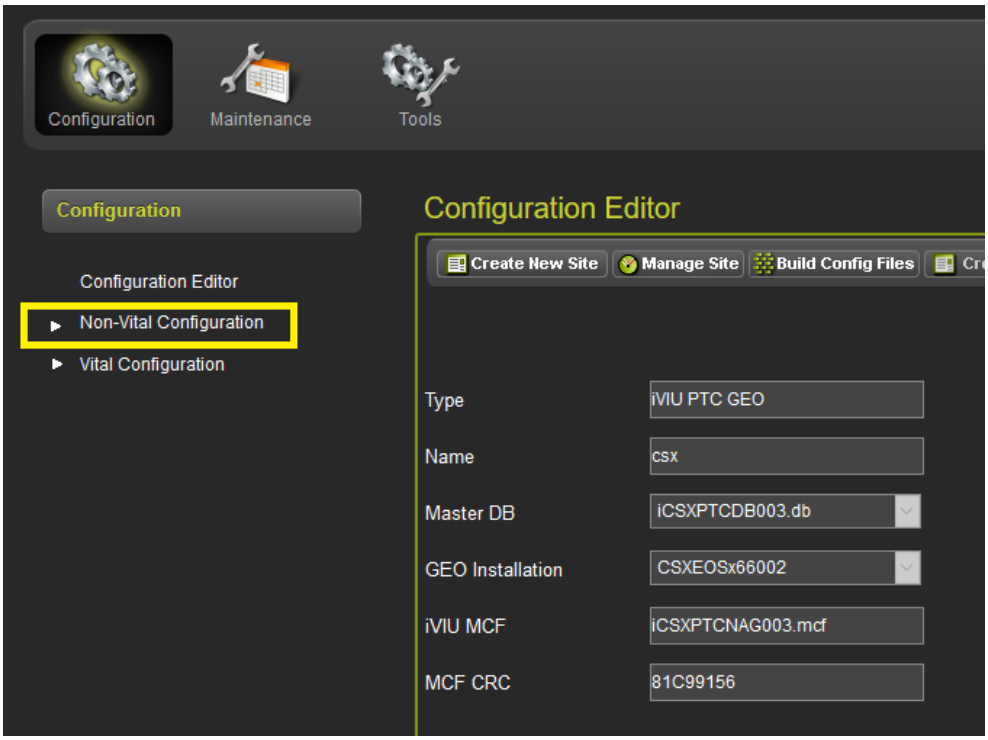

Figure 3-25 Non-Vital Configuration Menu

The following shows example menus found under the Non-Vital Configuration options.

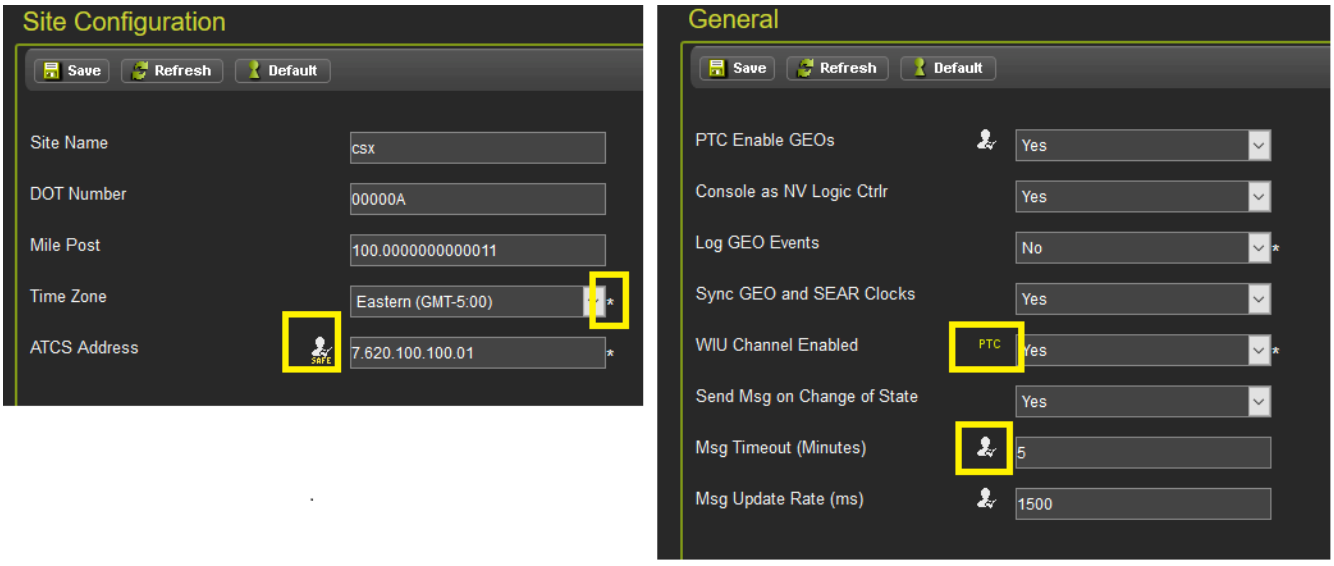

Figure 3-26 Example Non-Vital Configuration Menu

The above symbol indicates that the parameter requires local user presence to be changed when on the equipment installed in the field and that the unit be put into Edit mode, i.e. the vital processor is taken offline, which will cause the system to go into a restrictive state, (controlled signal will go to Stop and crossing will activate). This symbol is generally only used on fields that the vital processor uses.

The above symbol indicates that the parameter requires local user presence to be changed when on the equipment installed in the field, but Edit mode is not required, so the system will not go restrictive.

The Web UI can still be used to change the actual value, but someone first has to confirm that they are at the unit in the field by pressing a button on the unit in the field. The specific button will depend on the actual equipment; see appropriate equipment manuals for more details.

The above symbol indicates that the value of this parameter is used in the PTC UCN.

The asterisk (*) symbol on the right of the parameter values indicates that the parameter is listed at its default value.

Each parameter screen has some basic control buttons and alerts common to all. Figure 3-27 displays typical control buttons and alerts for saving or discarding changes made to the configuration.

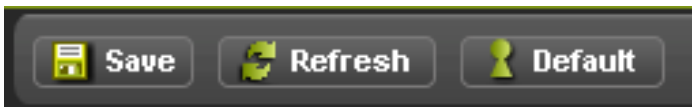

Figure 3-27 Basic Control Buttons

The **Save** button saves configuration parameters, the **Refresh** button refreshes the page, and the **Default** button returns all parameters on the page to default values.

After parameters on a page have been changed, click the **Save** button to save the changes. If the user tries to navigate away from a page before saving the changes, the OCE will give a warning message asking whether to save or discard the changes.

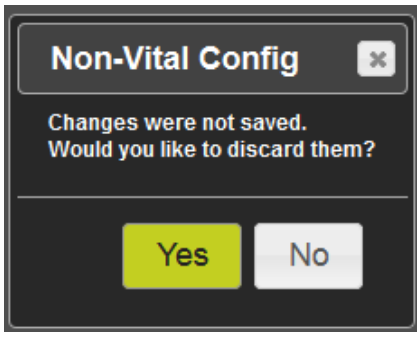

Figure 3-28 Basic Alert

For general text-based fields, type in the appropriate new value: the OCE will provide warnings such as the ones show in the Figure 3-29 if the entered data is out of range.

To set the fields on a specific non-vital configuration page back to defaults, select the **Default** button at the top of the page (see below). The OCE does not ask for confirmation for this action.

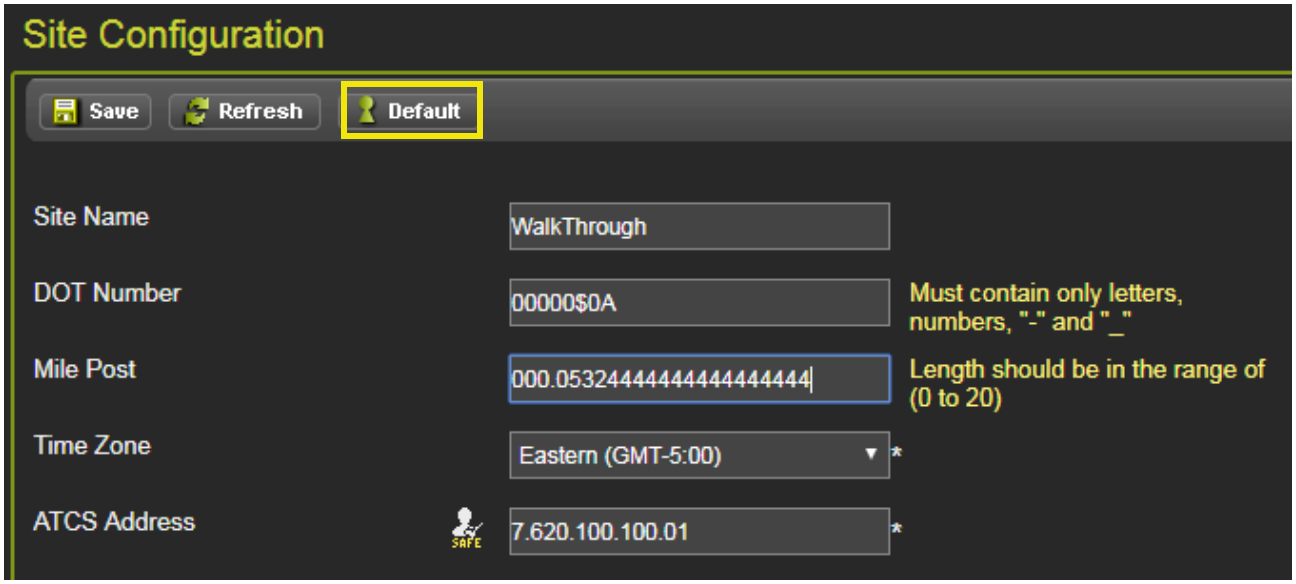

Figure 3-29 Data Entry Warning Messages

To set the non-vital configuration on all pages back to default, first select the **Set to Default** menu from the menu on the left, this will bring up the **Set to Default** screen, then select the **Default** button. The OCE will ask the user to confirm the command to set the non-vital configuration parameters back to default.

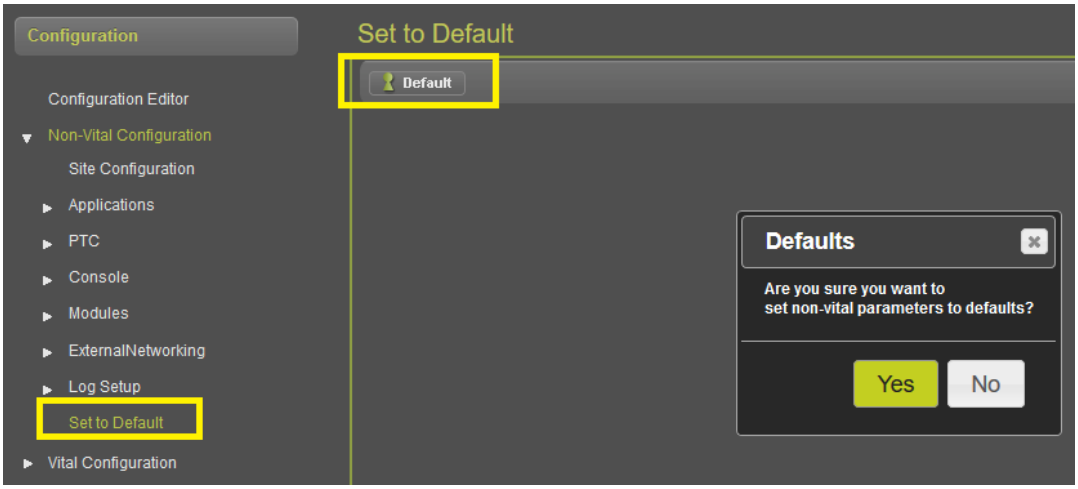

Figure 3-30 Set to Default

3.3.5 Vital Configuration

Each different product type, excepting the GCPs (see Section 4.5), will have a Vital Configuration menu. The submenus under this and the parameters on the submenus will depend on which MCF is used. Generally, the Vital Configuration menu has:

- Logical Configuration section under which are configuration parameters and timers specific to the MCF application logic
- Physical Configuration section under which are configuration parameters related to specific I/O module types used in the application
- Site Configuration: this section is shown for products that do not have a Non-Vital Configuration section, such as GEO
- Unique Check Number (UCN) is grayed out as this is not set in the OCE, it is only set in the field

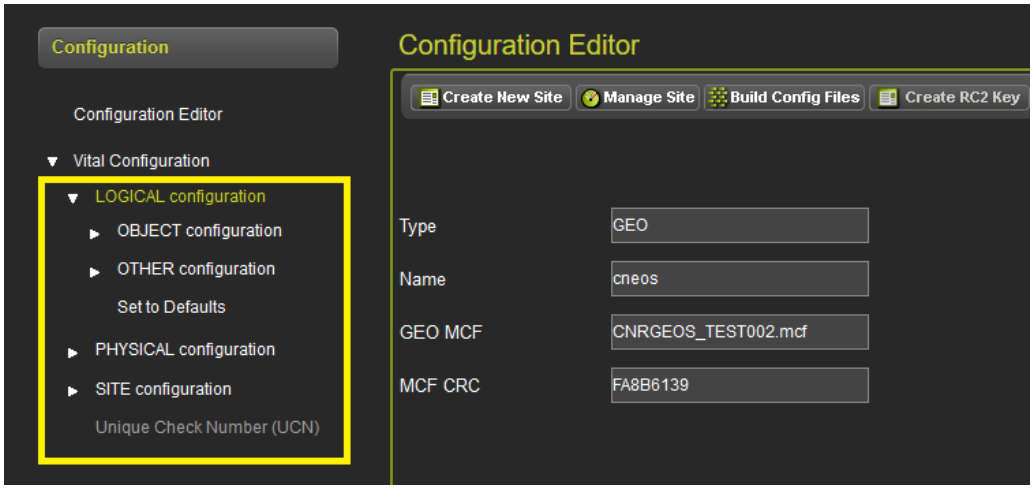

Figure 3-31 Vital Configuration Menus

The Vital Configuration menus will use many of the same symbols as the non-vital (described in the previous section) it will, however, also have the symbol shown below.

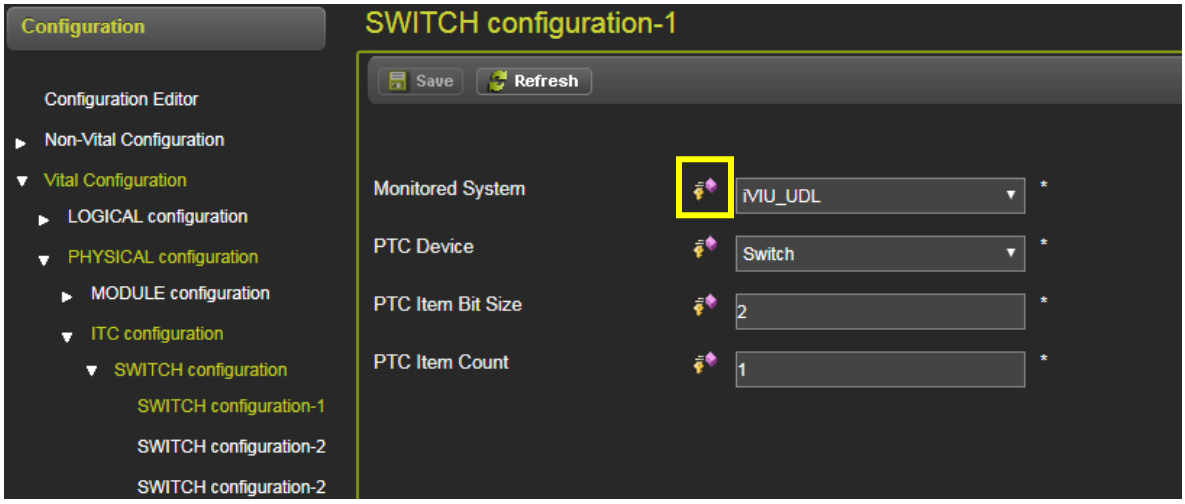

Figure 3-32 Vital Configuration Symbols

This symbol indicates the parameter is included in the UCN. To set the vital configuration parameters back to default in GEO/VIU/iVIU/IVIU PTC GEO, use either the **Set to Defaults** under Physical Configuration or the one under Logical Configuration. They will both set all the configuration parameters back to their default values.

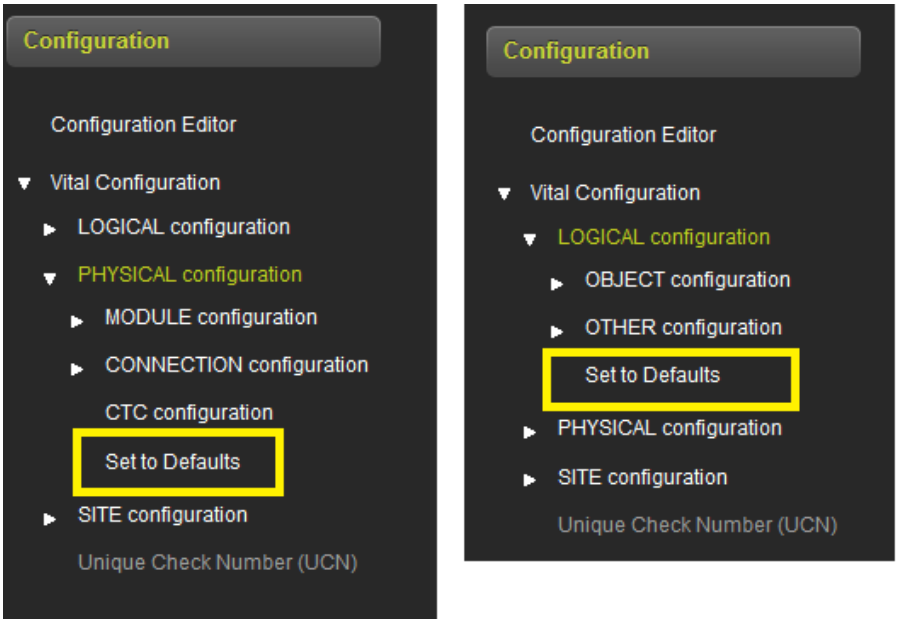

Figure 3-33 Vital Set to Defaults

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SECTION 4 CREATING PRODUCT-SPECIFIC CONFIGURATIONS

4.0 CREATING PRODUCT-SPECIFIC CONFIGURATION

4.1 IVIU PTC GEO SITES

The OCE can be used to create an iVIU PTC GEO installation for applications in which the iVIU Console (A80615) or PTC Console (A80672) is used to PTC-enable GEO systems. The OCE is used to:

- Automatically set the vital MCF parameters in the iVIU MCF from settings in the master GEO database for the chosen GEO installation
- Automatically set the Modules in the non-vital configuration based upon the chosen GEO installation
- Set the PTC related parameters, e.g. Class D settings, EMP settings, WIU message layout
- Set other non-vital configuration parameters
- Obtain the UCN for the specific installation
- Obtain the PTC UCN for the specific installation
- Obtain the configuration report containing the configuration settings
- Create the configuration files that can be loaded onto the Console using the Web UI or USB

The following procedure will provide step-by-step instructions on building an iVIU PTC GEO site.

1. From the Configuration screen, click on the **Create New Site** button and select IVIU PTC GEO on the drop-down menu.

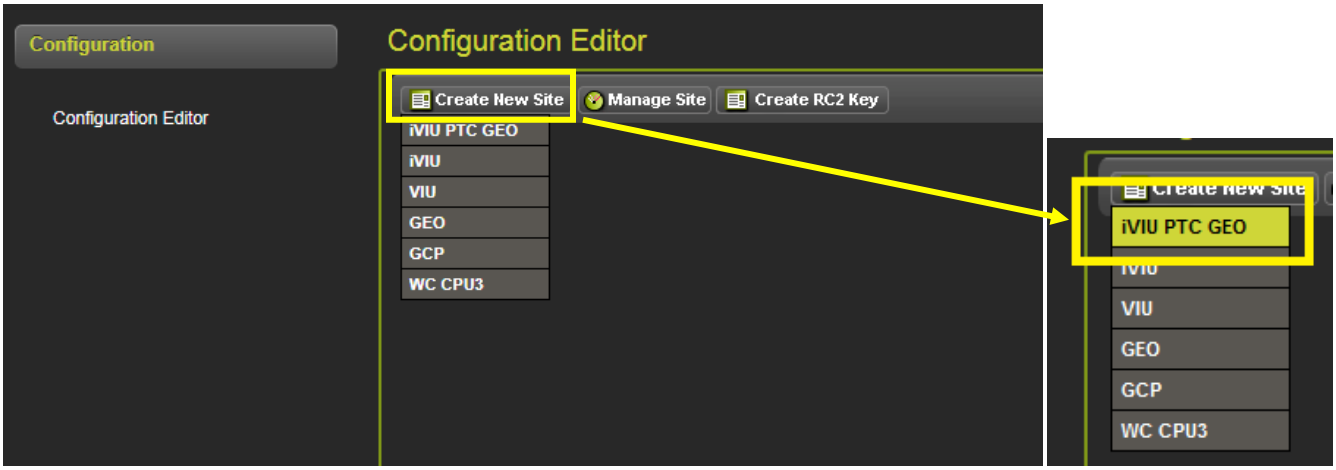


Figure 4-1 Create iVIU PTC GEO Site

2. The OCE will show the screen illustrated in Figure 4-2 below. Enter the name for the site (the name can be up to 20 characters, including spaces).
3. Select the appropriate Master PTC database using the **Master DB** drop-down menu. The Master PTC database does not come installed with the OCE, it will be provided separately to each user.

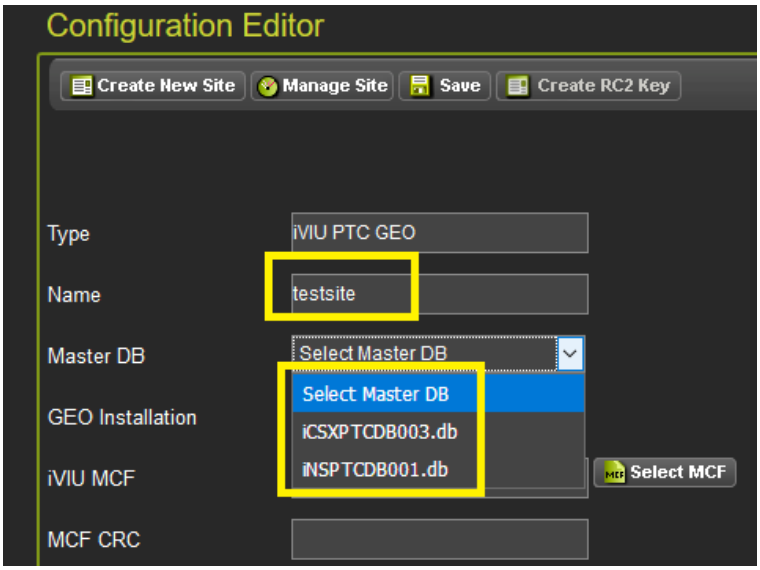


Figure 4-2 iVIU PTC GEO Site Configuration Editor

4. After the Master database has been selected, choose the GEO Installation from the drop-down list of installations within the selected database.

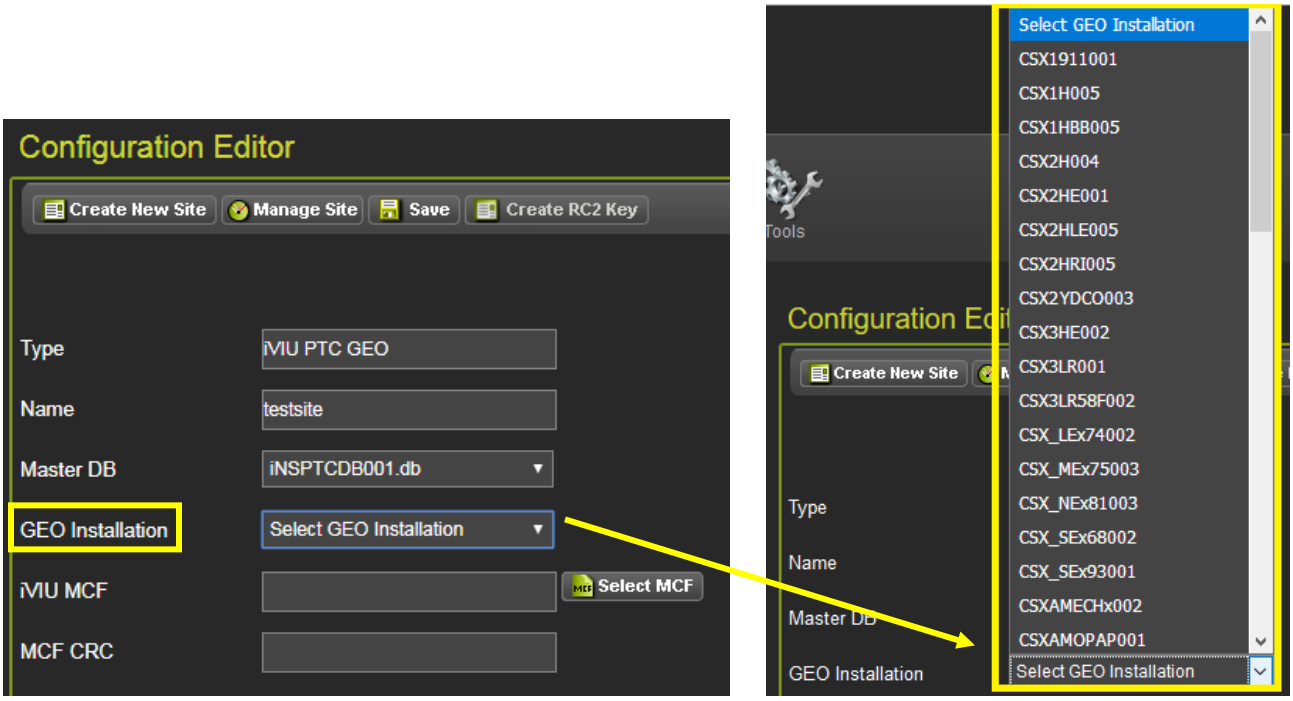


Figure 4-3 iVIU PTC GEO Site Select GEO Installation

5. After the GEO installation has been selected, the OCE will indicate whether this is an Appliance Model or a Non-appliance model GEO.
6. Next, press the Select MCF button. The OCE will bring up a screen where the MCF and MCF CRC can be selected.

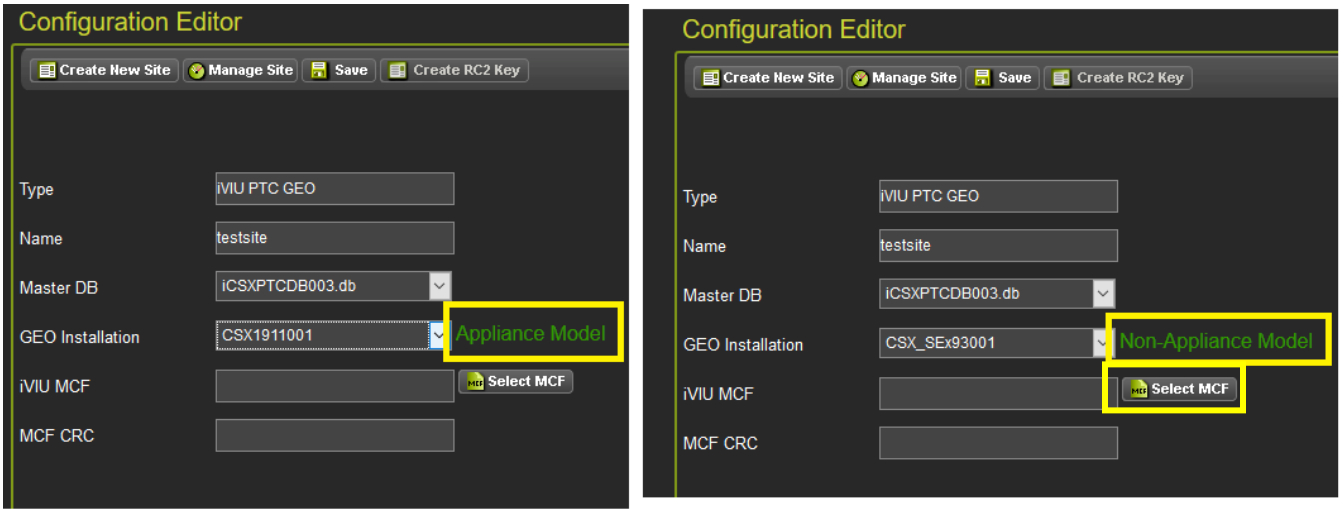


Figure 4-4 iVIU PTC GEO Appliance vs Non-Appliance

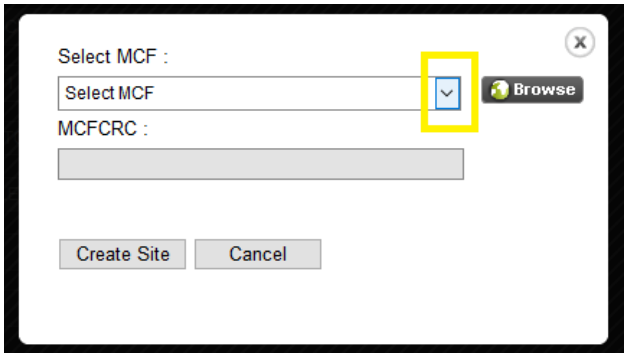


Figure 4-5 iVIU PTC GEO Select MCF

7. The correct iVIU MCF for the type of GEO installation has to be selected on this screen. For Non-Appliance GEO Installations the MCF name has 'NAG' in it, as shown below on the left. For Appliance GEO Installations the MCF name has 'GEO' in it, as shown below on the right. Choose the applicable MCF.

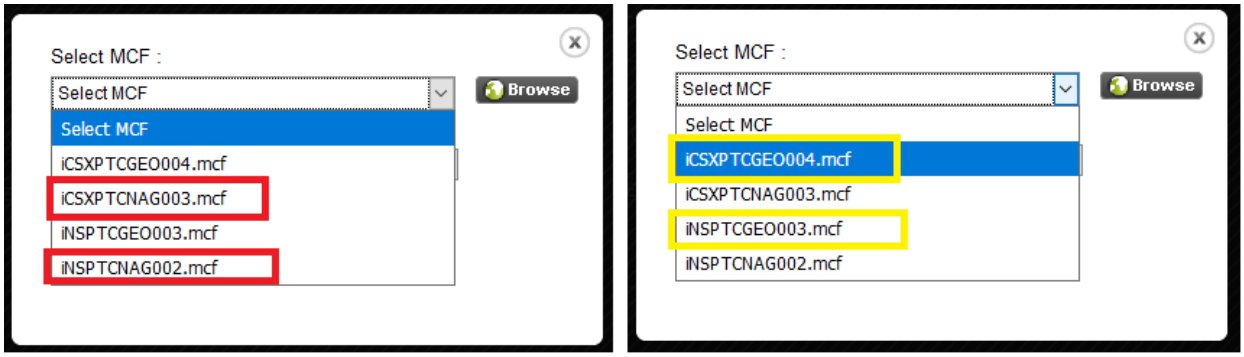


Figure 4-6 iVIU PTC GEO Appliance versus Non-Appliance

The OCE will automatically fill in the MCF CRC as shown below. Next press the **Create Site** button. The OCE will process the files and, after a few seconds, return to the main Configuration Editor screen.

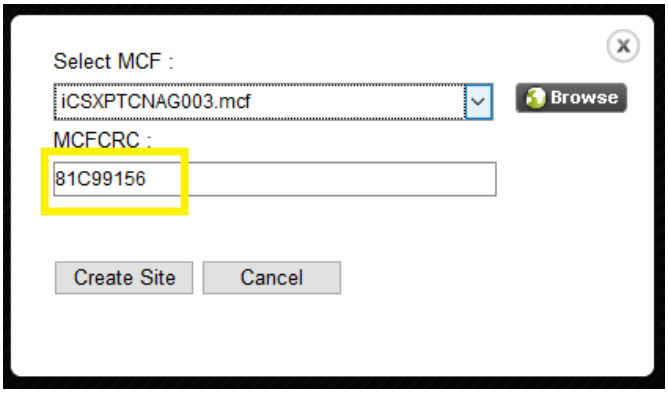


Figure 4-7 MCF CRC

NOTE

NOTE

When creating a new site, the OCE will ask for a MCF. The OCE keeps a repository of MCFs by site type, so if a MCF has been previously used or has been imported using the File Manager, the MCF will appear in the drop-down menu. After selecting the appropriate MCF, OCE will automatically fill in the MCF CRC if the .log file is present in the repository. If the MCF has not been used before it will be necessary to click on the **Browse** button to find the MCF and manually enter the MCF CRC which is obtained from the MCF's log file. The OCE will then copy the MCF over to its repository, so that if it is used again, it will be accessible from the drop-down menu.

4.1.1 Vital Configuration

The Vital Configuration menu for iVIU PTC GEO appears as illustrated in the following graphic.

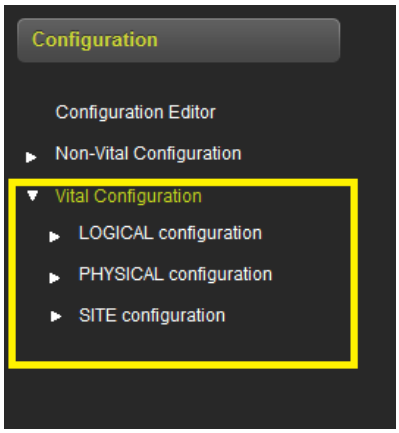


Figure 4-8 Vital Configuration Menu

4.1.1.1 Logical Configuration: Non-Appliance Model GEO

Under the Logical Configuration/Object Configuration are shown parameters associated with Signals, Switches, and Hazard Detectors. The information displayed on this screen will depend upon whether the MCF is an appliance model or a non-appliance model MCF.

The following screen shows the signal object information from a non-appliance model GEO, some of the values on this screen are automatically derived from the PTC database and some need to be entered by the user.

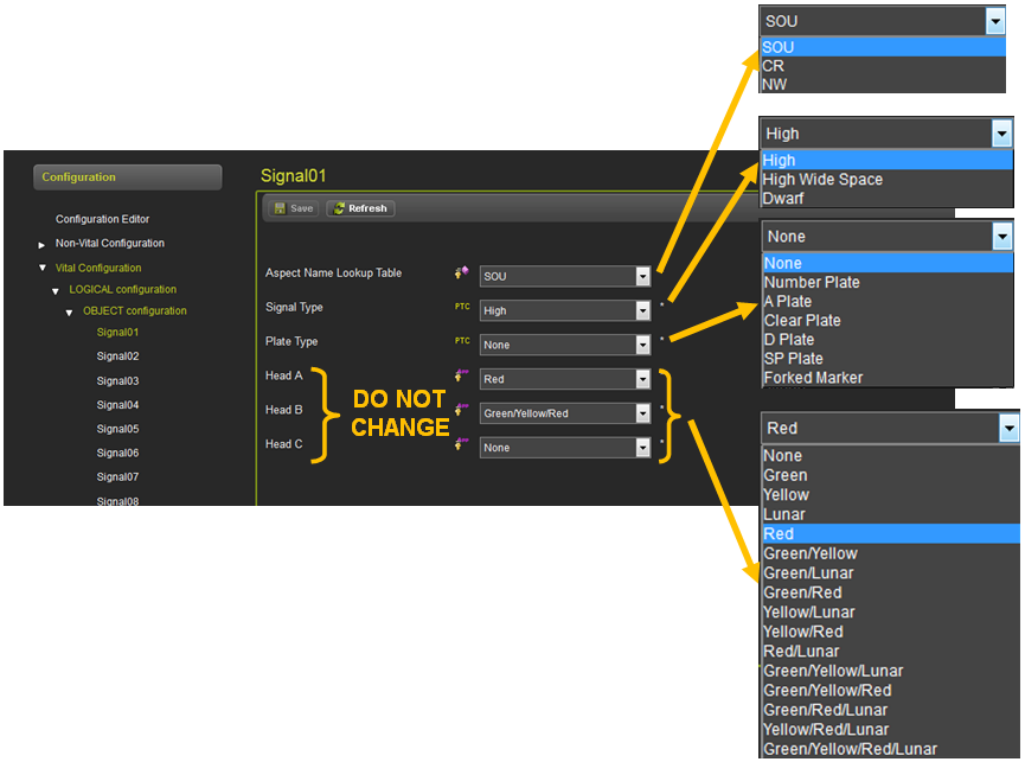


Figure 4-9 Signal Object Configuration Menus Non-Appliance Model GEO

The list below details which parameters can be user adjusted and which should not be modified:

- Aspect Name Lookup Table 1 – can be changed by the user
- Aspect Name Lookup Table 2 – can be changed by the user
- Signal Type – can be changed by the user
- Plate Type – can be changed by the user
- Head A – set by OCE from master database information, **DO NOT CHANGE**
- Head B – set by OCE from master database information, **DO NOT CHANGE**
- Head C – set by OCE from master database information, **DO NOT CHANGE**
- Debounce Timer – can be changed by the user

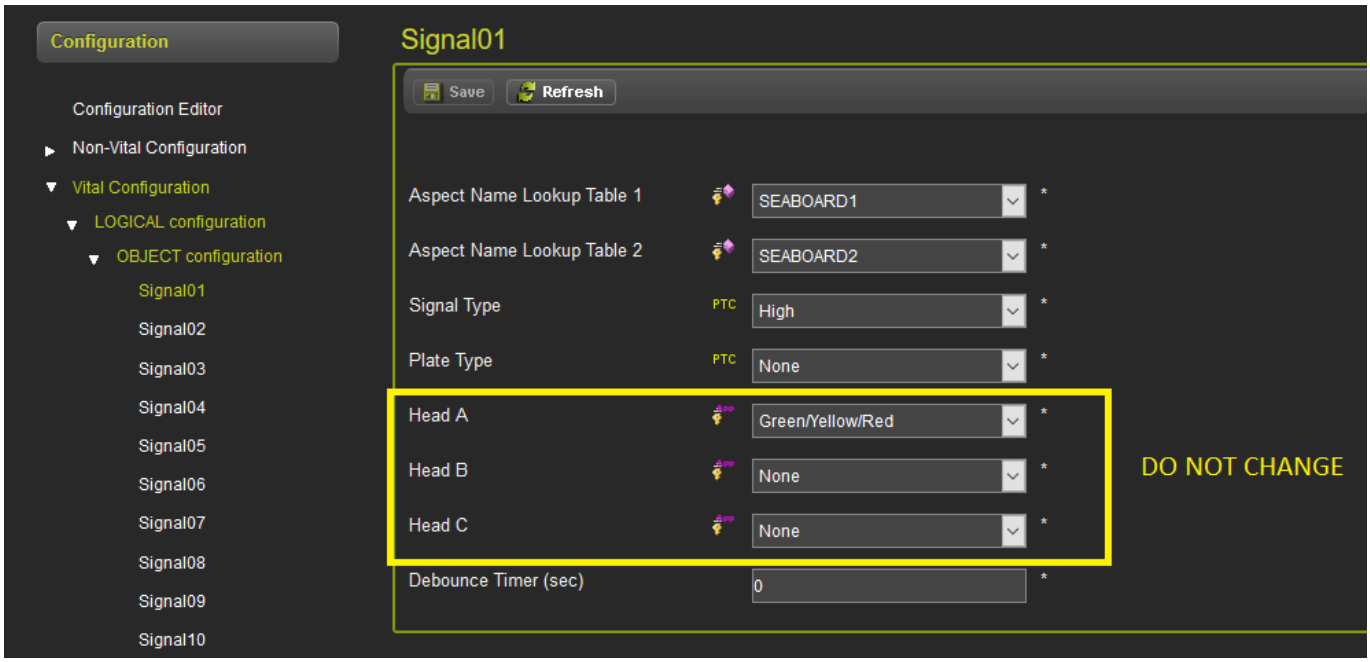


Figure 4-10 Parameters Do Not Change

The Debounce Timer can also be set for the Switch and Block Fault (Hazard Detector) objects. For an example see Figure 4-11.

Figure 4-11 Switch Object Configuration Menus Non-Appliance Model GEO

4.1.1.2 Logical Configuration: Appliance Model GEO

Under the Logical Configuration/Object Configuration are shown parameters associated with Signals, Switches, and Hazard Detectors.

The following screen shows the Logical Configuration/Object Configuration/Signal Aspects screen.

CAUTION

DO NOT CHANGE ANY PARAMETERS UNDER SIGASPECTS IN THE LOGICAL CONFIGURATION AS THESE VALUES ARE AUTOMATICALLY SET FROM THE VALUES IN THE PTC MASTER DATABASE.

Figure 4-12 SigAspects Configuration Menu Appliance Model GEO

The following screen shows the Logical Configuration/Object Configuration/Signal Screen for Signal01. Select the value of the Debounce Timer required, but do not change anything else.

CAUTION

DO NOT CHANGE ANY PARAMETERS UNDER SIGNAL01, 02, ETC. IN THE LOGICAL CONFIGURATION AS THESE VALUES ARE ALL AUTOMATICALLY SET FROM THE VALUES IN THE PTC MASTER DATABASE.

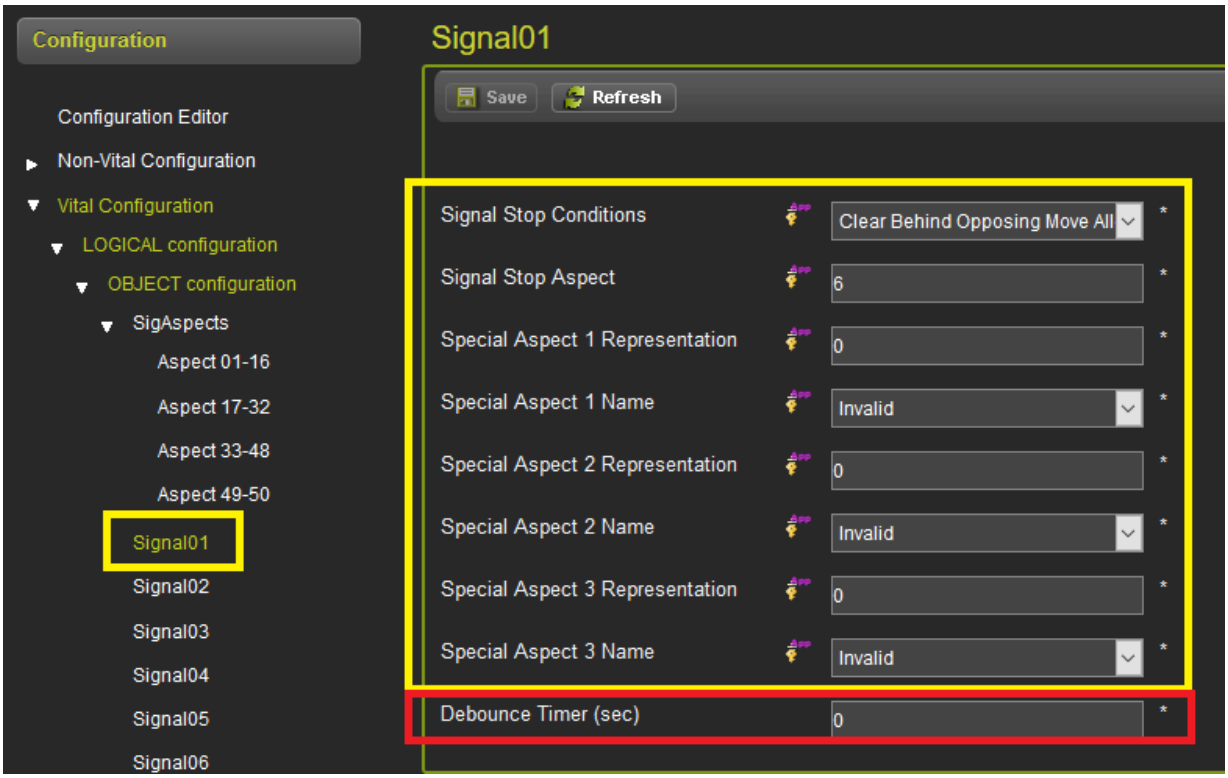


Figure 4-13 Signal Configuration Menu Appliance Model GEO

The following screen shows the Logical Configuration/Object Configuration/Switch and BlockFault screens. Select the value of the Debounce Timer required.

Figure 4-14 Switch Configuration Menu Appliance Model GEO

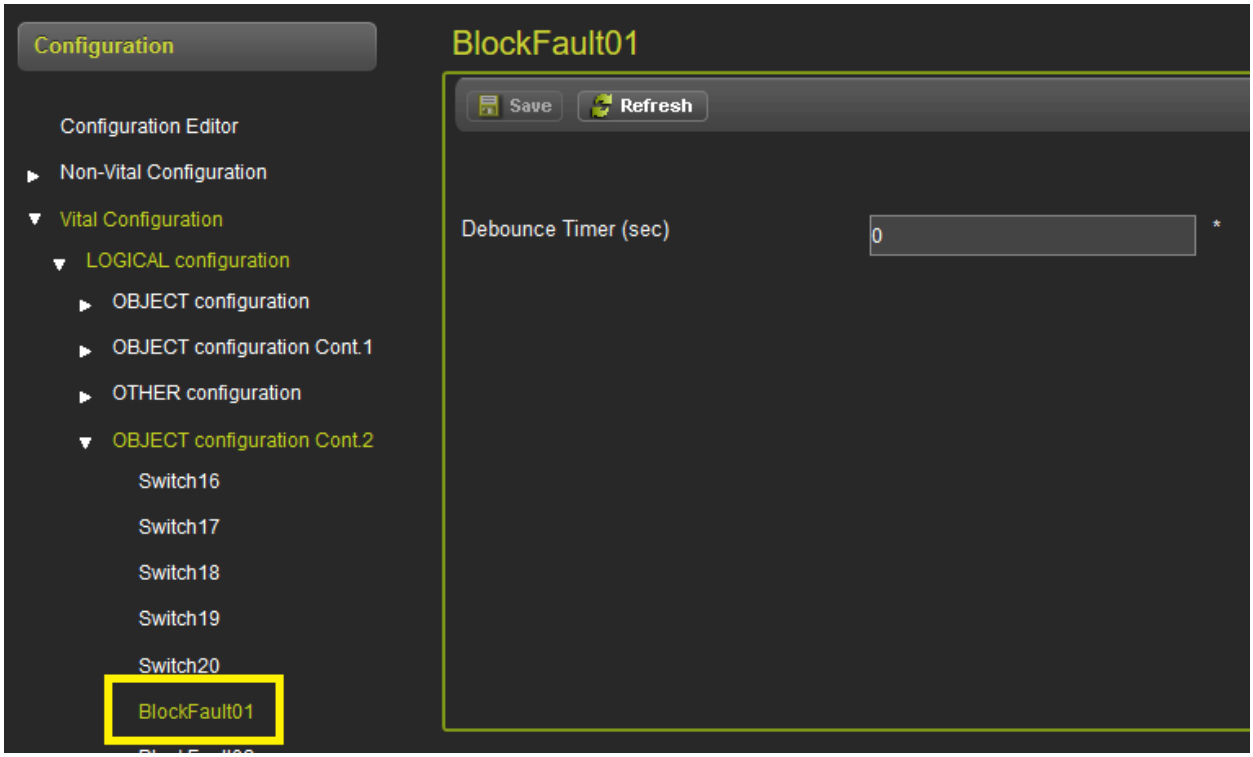


Figure 4-15 Block Fault Configuration Menu Appliance Model GEO

4.1.1.3 Physical Configuration

Under the Physical Configuration/Modules are the different submenus shown below. For iVIU PTC GEO applications, there are no parameters that required change under any of these menus.

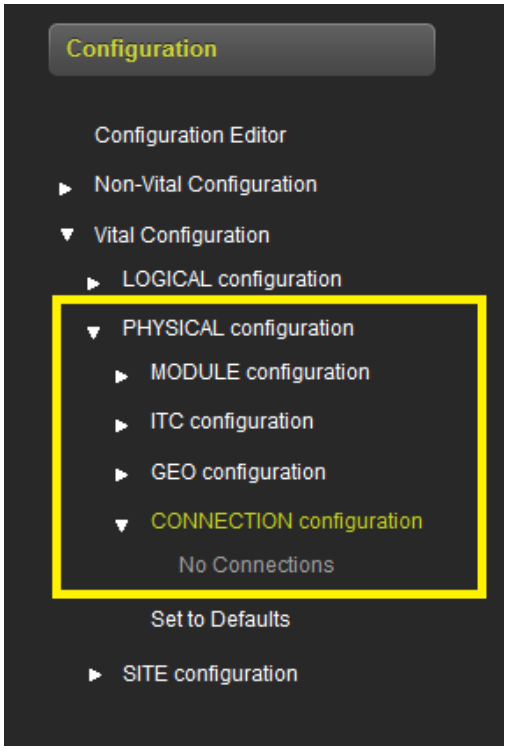


Figure 4-16 Physical Configuration Menus

⚠ CAUTION

CAUTION

DO NOT CHANGE ANY PARAMETERS UNDER PHYSICAL CONFIGURATION/GEO CONFIGURATION AS THESE VALUES ARE ALL AUTOMATICALLY SET FROM THE VALUES IN THE PTC MASTER DATABASE.

⚠ CAUTION

CAUTION

DO NOT CHANGE ANY PARAMETERS UNDER THE PHYSICAL CONFIGURATION/ITC CONFIGURATION AS THESE VALUES ARE AUTOMATICALLY CHANGED WHEN THE WIU MESSAGE LAYOUT UNDER THE NON-VITAL CONFIGURATION IS CHANGED.

The Site Configuration has Object and Card Name menus, these are not applicable for iVIU PTC GEO applications.

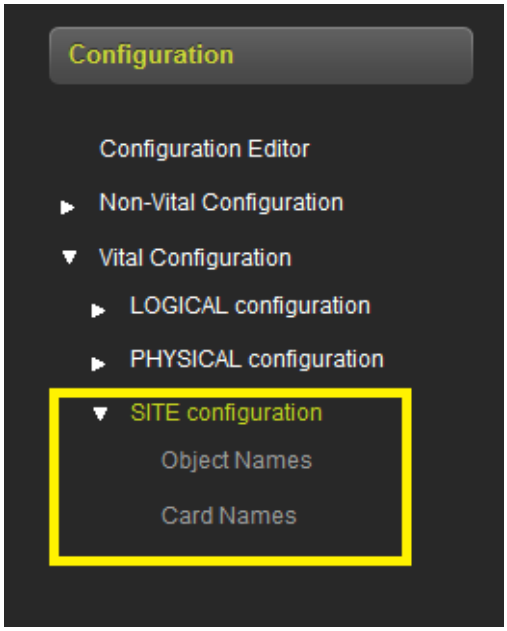


Figure 4-17 Vital Site Configuration Menu

4.1.2 Non-Vital Configuration

The Non-Vital Configuration has many submenus containing information that needs configuring for an iVIU PTC-enable GEO installation. This section will outline the main changes, but will not discuss in detail each parameter on each screen. See the PTC Console Manual (SIG-00-13-12A) and iVIU Console Manual (SIG-00-11-05A) for specific details on each parameter.

4.1.2.1 Site Configuration Menu

In the Site Configuration menu set:

- The Site Name – the OCE will automatically set the name of the site entered when the site was created (see Figure 4-31) but this name can be changed here if needed.
- The DOT number if applicable
- The Mile post if applicable
- The Time Zone
- The ATCS address of the unit. This address should have the same ATCS railroad, line, and group number as the GEOs that are being PTC-enabled.

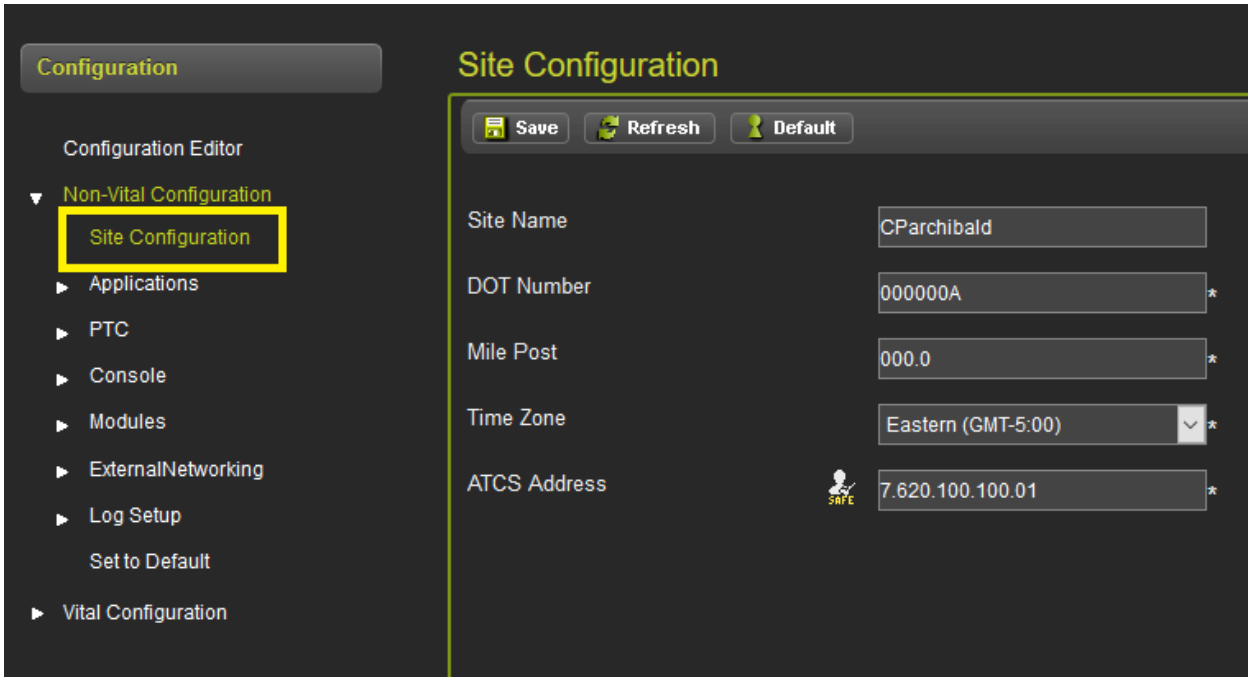


Figure 4-18 Non-Vital Site Configuration Menu

4.1.2.2 Applications Menu

If system management is being used for this location, it is necessary to load and set up the CDL. Go to the applications / CDL menus to perform this. Section 5.1 contains details on how to setup CDL applications.

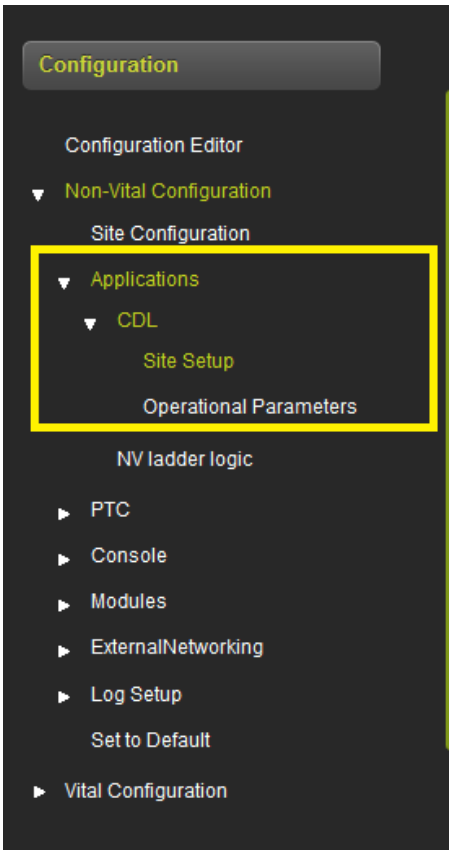


Figure 4-19 Non-Vital: Application Menu

The NV Ladder Logic menu is not used in the iVIU PTC GEO applications.

4.1.2.3 PTC Menu

The PTC submenus are where most changes will be required for iVIU PTC GEO applications. Section 5.2 describes how to set the PTC parameters.

If the railroad has specific defaults values that they want to use for the PTC fields which don't match the default values provided in the OCE, a template can be set up for the application; see Section 3.2.4 for information on how to set up a template.

The Class D Test parameters are configured under the Maintenance / PTC Class D Tests menu.

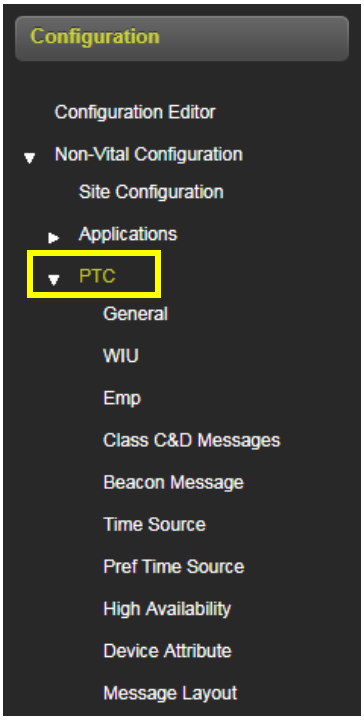


Figure 4-20 Non-Vital: PTC Menu

4.1.2.4 Console Menu

The Console menu has the submenus shown in the figure below.

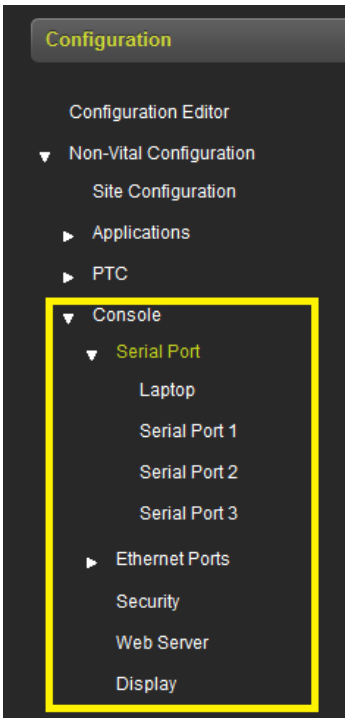


Figure 4-21 Non-Vital: Console Menu

The OCE automatically sets up the defaults for iVIU/PTC GEO assuming that the Console will be used to PTC enable a GEO system that uses the CPU II+ (A80903). In this case, the Console and CPU II+ communicate via the Echelon network; however, if the iVIU/PTC Console is being used to PTC enable a GEO non-appliance model system that uses a CPU I (A53268) a serial port on the iVIU will be connected to the diagnostic port on the CPU I. In this case the OCE can be used to set the Serial Port protocol for the port to be used, as shown below.

Figure 4-22 Non-Vital: Setting Serial Protocol

See PTC Console manual (SIG-00-13-12A) and iVIU Console Manual (SIG-00-11-05A) for further details.

4.1.2.5 Modules Menu

The Modules menu is used to set up which modules the Console is communicating with. For iVIU PTC-enable applications, the information about the GEO is filled in from the PTC database. The only field that the user needs to fill in is the UCN field.

To set the UCN field up:

1. Select the first GEO module by clicking on the blue arrow next to it (shown in green box below).
2. Find the ATCS subnode for this GEO (shown in yellow box below).
3. From the GEO plans, obtain the UCN for the GEO with this subnode.
4. Enter the UCN for this GEO in the UCN field (shown in the red box below).
5. Repeat this for each GEO module shown.

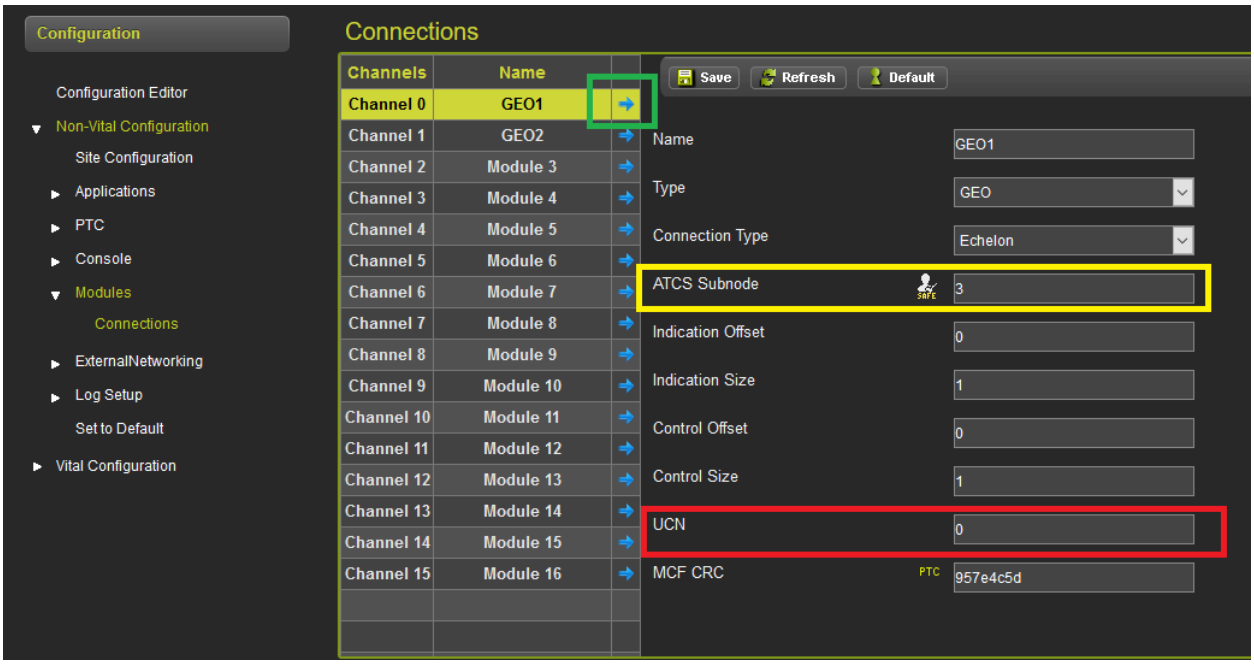


Figure 4-23 Setting the GEO UCN

If the iVIU/PTC Console is being used to PTC-enable a GEO non-appliance model system that uses a CPU I (A53268), the Connection Type will also need to be changed from Echelon to Serial. Repeat this action for each GEO module.

Figure 4-24 Setting the GEO Connection Type

4.1.2.6 External Networking Menu

The main use of the External Networking menu in iVIU PTC-enable applications will be to set the SNMP parameters required for system management as illustrated below.

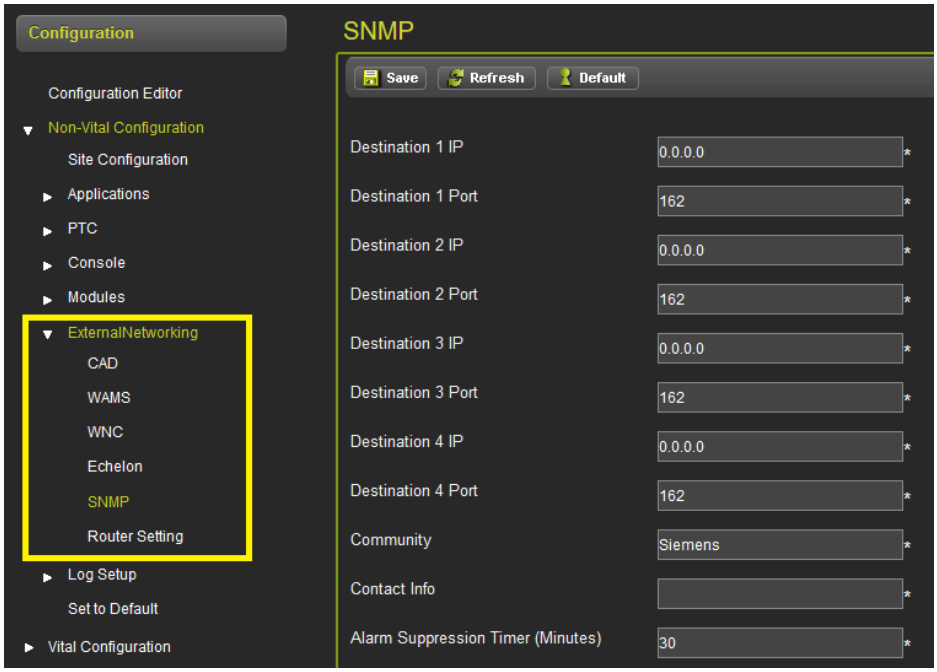


Figure 4-25 Non-Vital: External Networking/SNMP Menu

4.1.2.7 Log Setup

The Consolidated Logging feature is not used in iVIU PTC-Enable applications as only 1 Console is used.

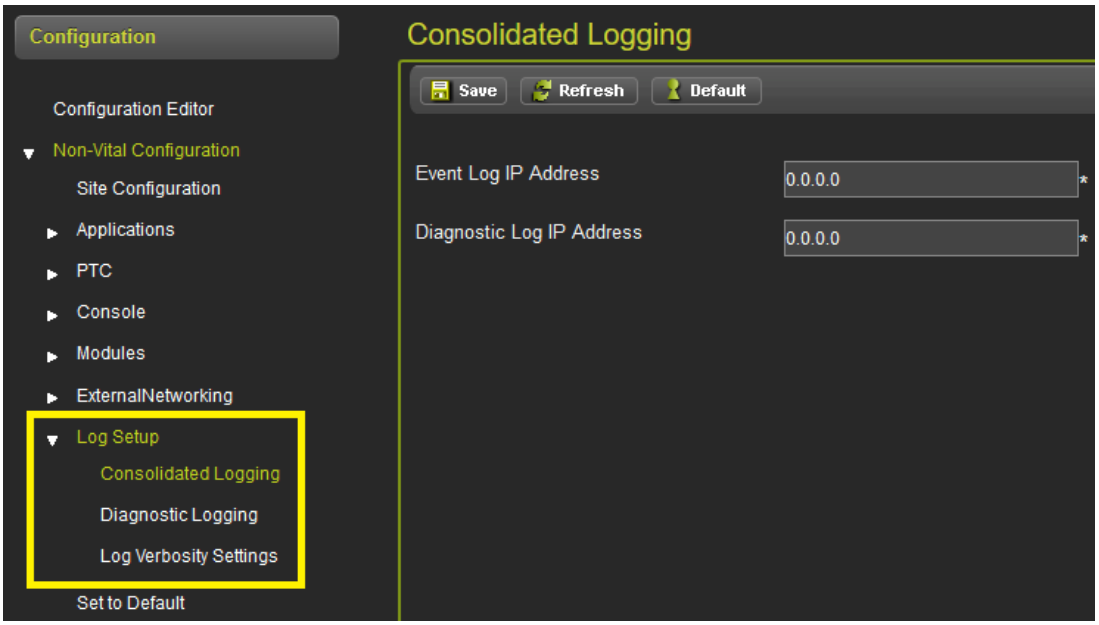


Figure 4-26 Non-Vital: Log Setup

4.1.3 Building Configuration Files

After the configuration values in the Non-Vital and Vital Configuration have been entered, return to the Configuration Editor menu and select the **Build Config Files** button shown below. After a few seconds the OCE will show a message indicating Build Created Successfully.

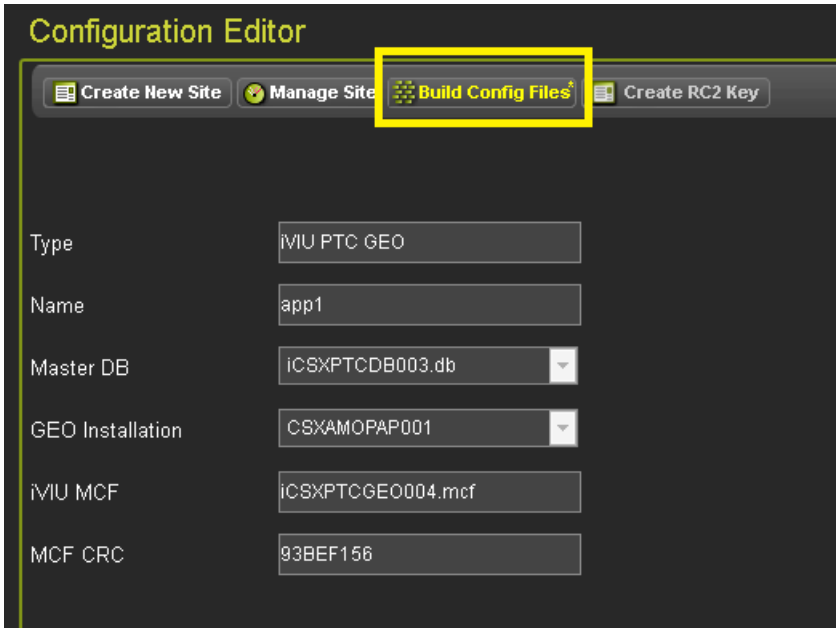


Figure 4-27 Build Config Files

The OCE will then show the Config Reports button. To view the report, click **Config Report** Button and the file can be either downloaded or viewed.

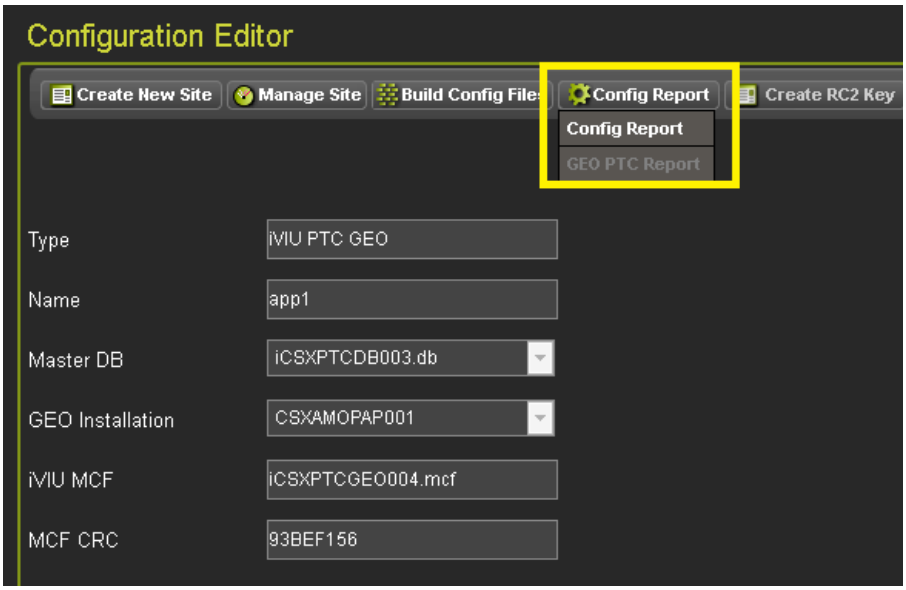


Figure 4-28 Config Reports button

WARNING

THE CONFIGURATION REPORT MUST BE CHECKED TO ENSURE THAT THE PARAMETERS THAT AFFECT THE SAFETY ARE CORRECTLY SET.

At the end of the configuration report the UCN for the location is printed. This will need to be entered into the unit in the field via the Web UI or Local UI. To ensure that the correct configuration is downloaded into the correct site, it is not downloaded automatically as part of the ZIP file. The report also contains the PTC UCN, this also will need to be manually set for the equipment in the field.

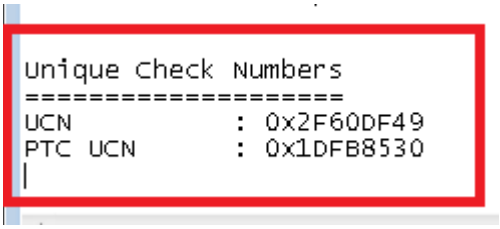


Figure 4-29 UCN/PTC UCN in Configuration Report

4.2 IVIU SITES

The OCE can be used to create installations for sites where the iVIU or PTC console is used standalone; for example, it may be used to monitor a switch in dark territory.

The OCE is used to create an iVIU installation for applications in which the iVIU Console (A80615) or PTC Console (A80672) is used in a standalone mode (i.e. not associated with a GEO installation. The OCE is used to:

- Set the vital MCF parameters
- Set the PTC related parameters, e.g. Class D settings, EMP settings, WIU message layout
- Set other non-vital configuration parameters
- Obtain the UCN for the specific installation
- Obtain the PTC UCN for the specific installation
- Obtain the configuration report containing the configuration settings
- Create the configuration files that can be loaded onto the Console using the Web UI or USB

To create an iVIU Site, the following procedure provides a step by step process:

1. From the Configuration Editor screen, select iVIU on the **Create New Site** drop menu shown in the figure below.

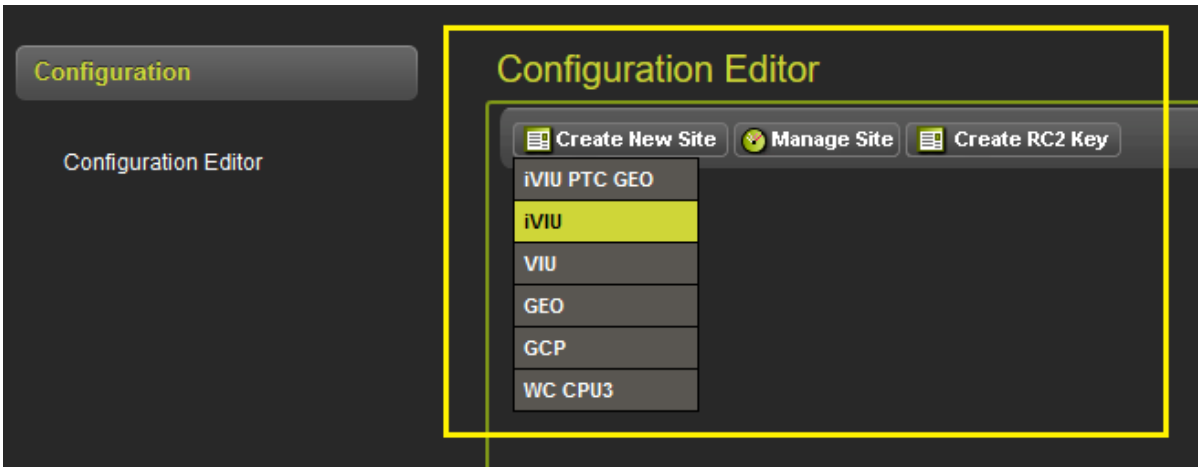


Figure 4-30 Creating a New iVIU Site

2. The first parameter (Type) is already filled in by OCE. Enter a name for the site. The name can be up to 20 characters including spaces.

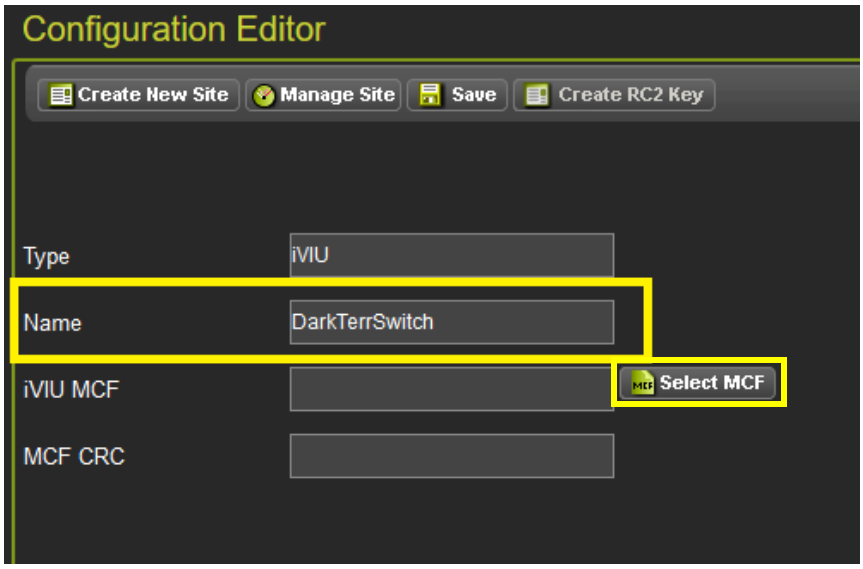


Figure 4-31 iVIU Site Name

3. Then press the **Select MCF** button (shown in the figure above). The OCE will show the screen illustrated in the graphic below. From here, either select the drop-down arrow next to Select MCF, which will allow selection of an MCF that has already been used by the OCE, or use the Browse button to select the MCF.

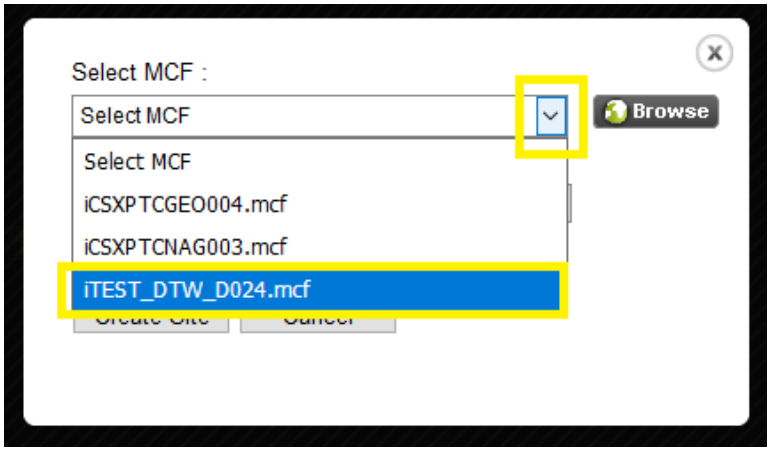


Figure 4-32 iVIU Select MCF

4. If the **Browse** button has been selected, then obtain the MCF CRC (from the MCF log file) and enter it in the MCFCRC field. If the drop-down arrow is used, the MCFCRC will automatically be filled in.

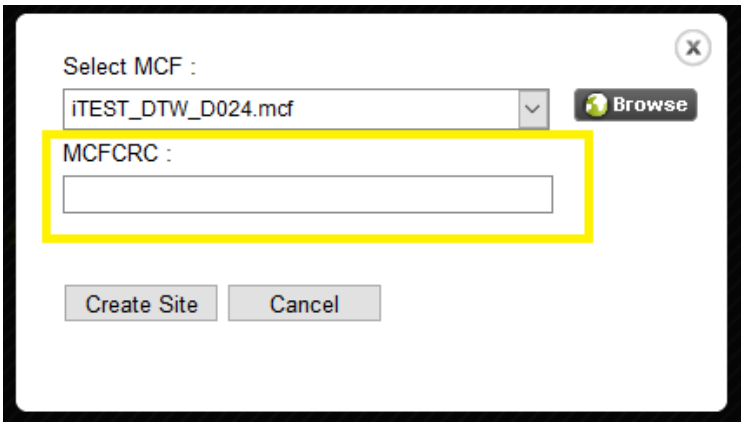


Figure 4-33 iVIU Enter MCF CRC

5. Then press the **Create Site** button (shown in the graphic above.) The OCE will then process the MCF and return to the Configuration Editor screen and show the Non-Vital and Vital Configuration menus on the left.

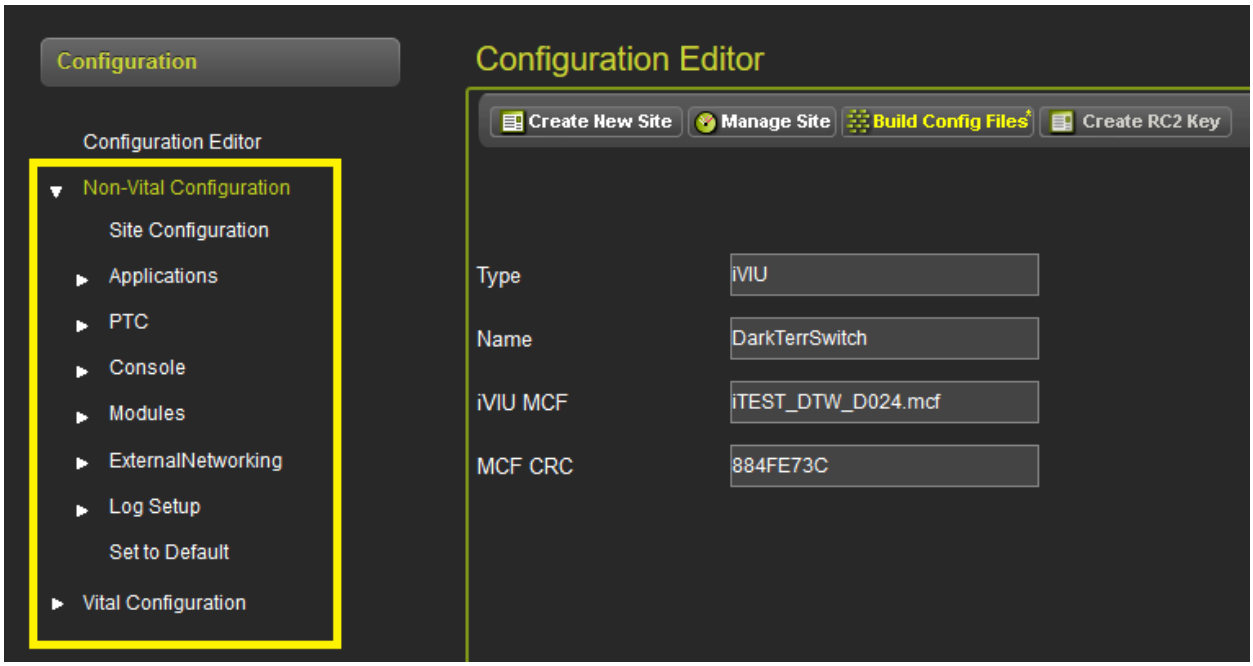


Figure 4-34 Ready for Configuration of iVIU

4.2.1 Vital Configuration

1. First, go to the Vital Configuration / Physical Configuration and select the required Physical Layout as shown in the figure below. In general there will only be one Physical Layout in iVIU MCFs, however, since this value potentially affects all other menus and settings, check that the correct one is chosen before proceeding.

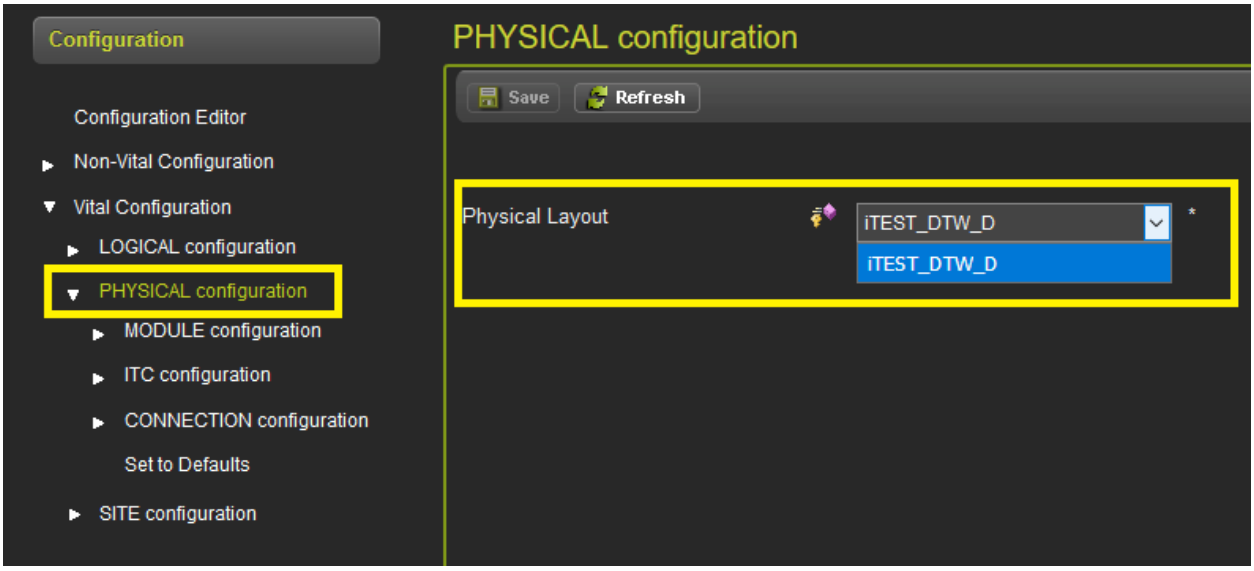


Figure 4-35 iVIU Setting Physical Layout

NOTE

NOTE

Each Physical Layout has its own sets of menus and parameters and possibly PTC devices. The correct Physical Layout must be selected prior to setting any other Vital Configuration parameters or setting Non-Vital Configuration PTC Device or Layout settings.

2. Typically an iVIU site will have very few Vital Configuration parameters to change. Go to the Vital Configuration/Logic Configuration/Object Configuration menu and check to see if there are any parameters to configure. In the case shown below, there are none.

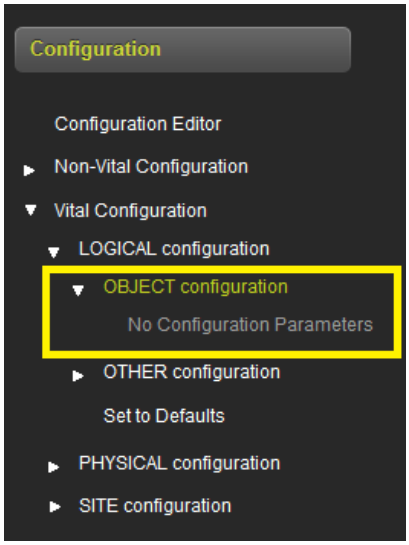


Figure 4-36 iVIU Object Configuration

3. Next go to the Vital Configuration / Physical Configuration / Module Configuration / SLOT 1. The only parameter that is used for iVIU applications is the Debounce. This is the debounce timer for the 2 inputs on the Console. Select the required value.

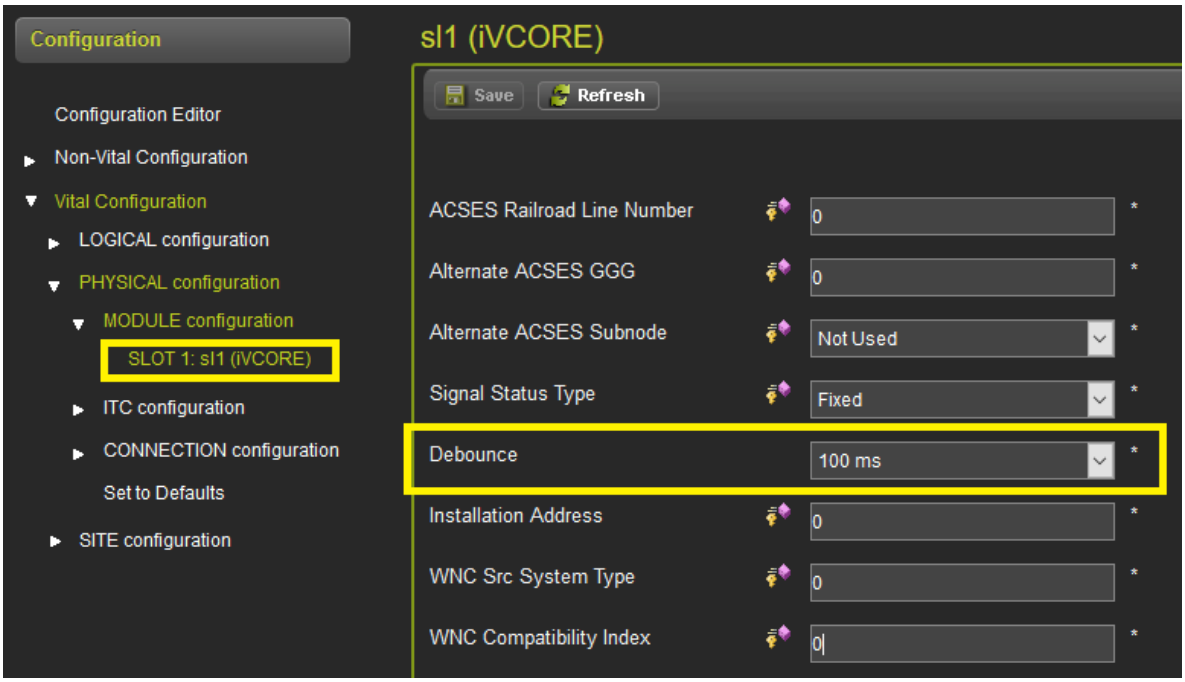


Figure 4-37 iVIU Module/Slot 1 Configuration

CAUTION

DO NOT CHANGE ANY PARAMETERS UNDER THE PHYSICAL CONFIGURATION/ITC CONFIGURATION AS THESE VALUES ARE AUTOMATICALLY CHANGED WHEN THE WIU MESSAGE LAYOUT UNDER THE NON-VITAL CONFIGURATION IS CHANGED.

⚠ CAUTION

4.2.2 Non-Vital Configuration

The Non-Vital Configuration has many submenus containing information that needs configuring for an iVIU installation. This section will outline the main changes, but will not discuss in detail each parameter on each screen, see the PTC Console Manual (SIG-00-13-12A) and iVIU Console Manual (SIG-00-11-05A) for specific details for each parameter.

4.2.2.1 Site Configuration Menu

In the Site Configuration menu set:

- The Site Name. The OCE will automatically set the name of the site entered when the site is created (see Figure 4-31) but this name can be changed here if needed.
- The DOT number if applicable
- The Mile post if applicable
- Time Zone
- The ATCS address of the unit if applicable.

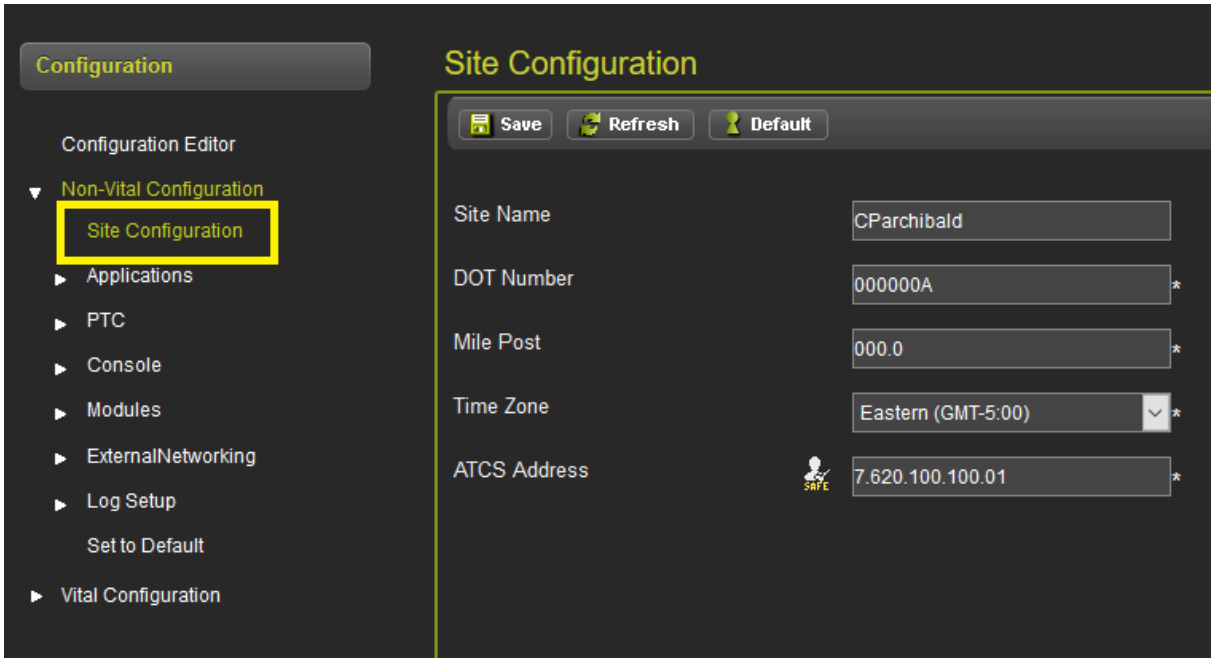


Figure 4-38 Non-Vital: iVIU Site Configuration Menu

4.2.2.2 Applications Menu

If systems management is being used for this location, it is necessary to load and set up CDL. Go to the applications/CDL menus to perform this. Section 5.1 contains details on how to setup CDL applications.

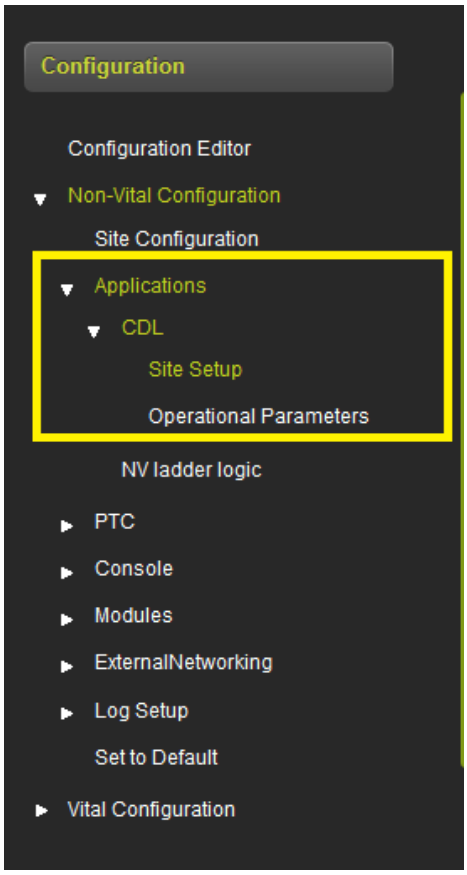


Figure 4-39 Non-Vital: Application Menu

The NV Ladder Logic menu is not used in iVIU applications.

4.2.2.3 PTC Menu

The PTC submenus are where most changes will be required for iVIU applications. See the PTC Section 4.3.2.2 for more detailed information about these screens.

If the railroad has specific defaults values that they want to use for the PTC fields which do not match the default values in the OCE, save the desired settings as a template that can be used for future applications; see section 3.2.4.

NOTE

NOTE

Class D Test parameters are configured under the Maintenance / PTC Class D Tests Menu.

4.2.3 Building Configuration Files

After the configuration values in the Non-Vital and Vital Configuration menus have been entered, select the **Build Config Files** button shown below. After a few seconds the OCE will show a message indicating Build Created Successfully.

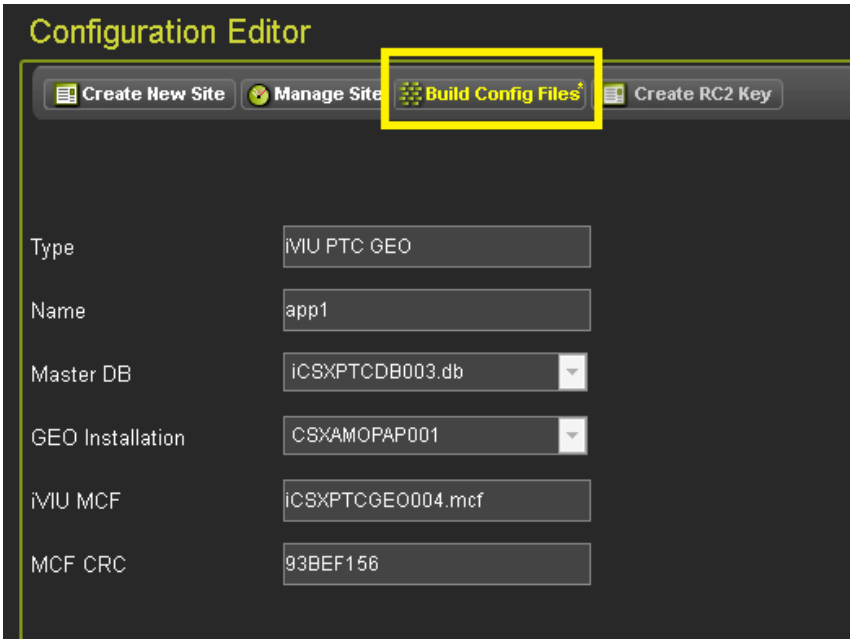


Figure 4-40 Build Config Files

The OCE will then show the **Config Reports** button. To view the report, click the button and the file can be either downloaded or viewed.

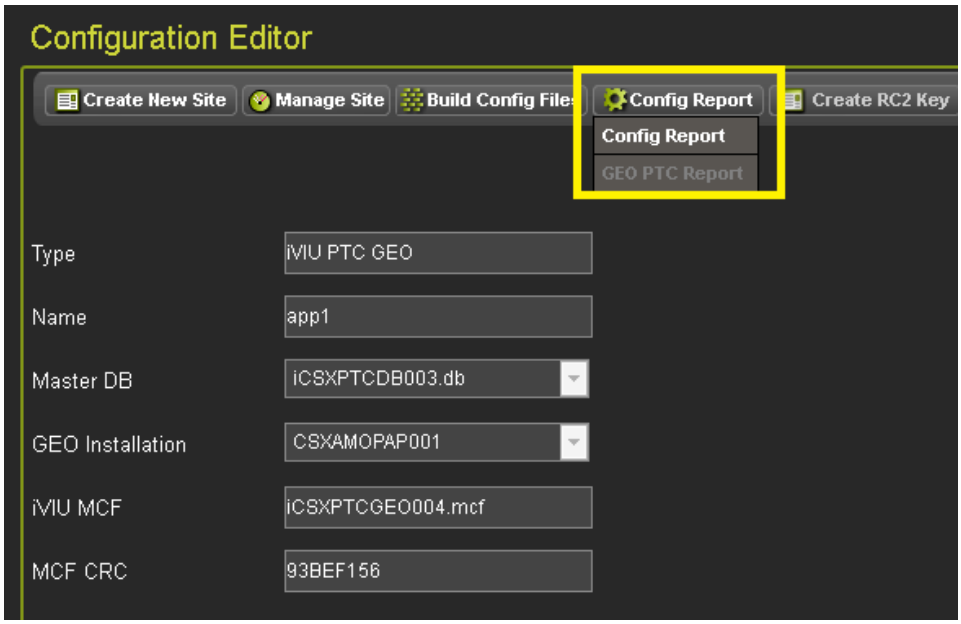


Figure 4-41 Config Reports button

WARNING

THE CONFIGURATION REPORT MUST BE CHECKED TO ENSURE THAT THE PARAMETERS THAT AFFECT THE SAFETY ARE CORRECTLY SET.

At the end of the configuration report, the UCN for the location is printed. This will need to be entered into the unit in the field via the Web UI or Local UI. To ensure that the correct configuration is downloaded into the correct site, it is not downloaded automatically as part of the ZIP file. The report also contains the PTC UCN, this will also need to be manually set for the equipment in the field if the iVIU is used in a PTC application. The PTC UCN will be 0 for a non-PTC application.

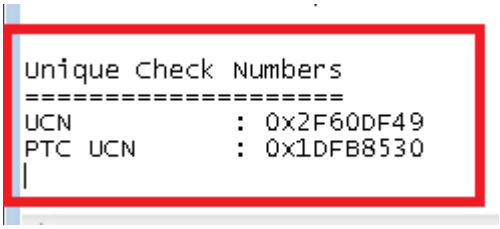


Figure 4-42 UCN/PTC UCN in Configuration Report

4.3 VIU SITES

The OCE can be used to create a VIU installation. The OCE is used to:

- Set the vital MCF parameters for the VIU MCF
- Set the PTC related parameters, e.g. Class D settings, EMP settings, WIU message layout
- Set other non-vital configuration parameters
- Obtain the UCN for the specific installation
- Obtain the PTC UCN for the specific installation
- Obtain the configuration report containing the configuration settings
- Create the configuration files that can be loaded onto the VIU using the Web UI or USB.

To create a VIU Site, the following procedure provides a step by step process:

1. Select VIU on the **Create New Site** drop menu shown in Figure 4-43.

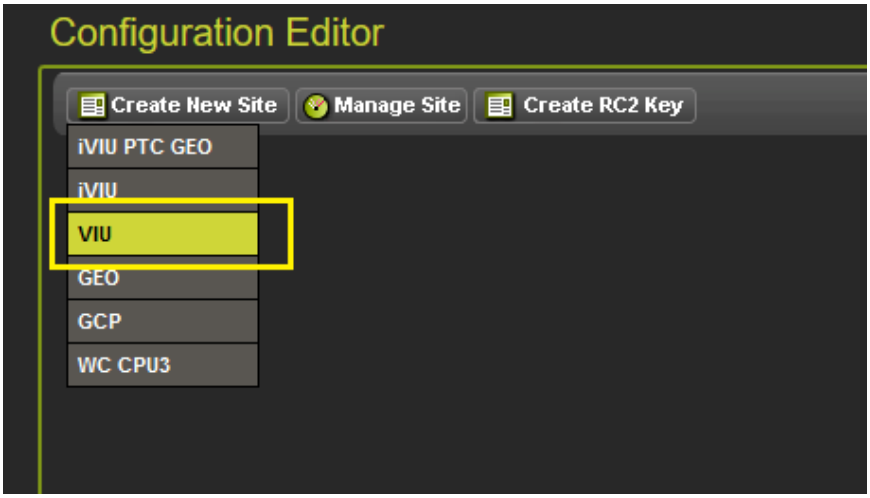


Figure 4-43 Creating a VIU Site

2. A Site Configuration Editor screen will appear listing four parameters with text boxes and drop menus for establishing the site Name, VIU MCF, and the MCF CRC. Enter the site name in the **Name** text box.

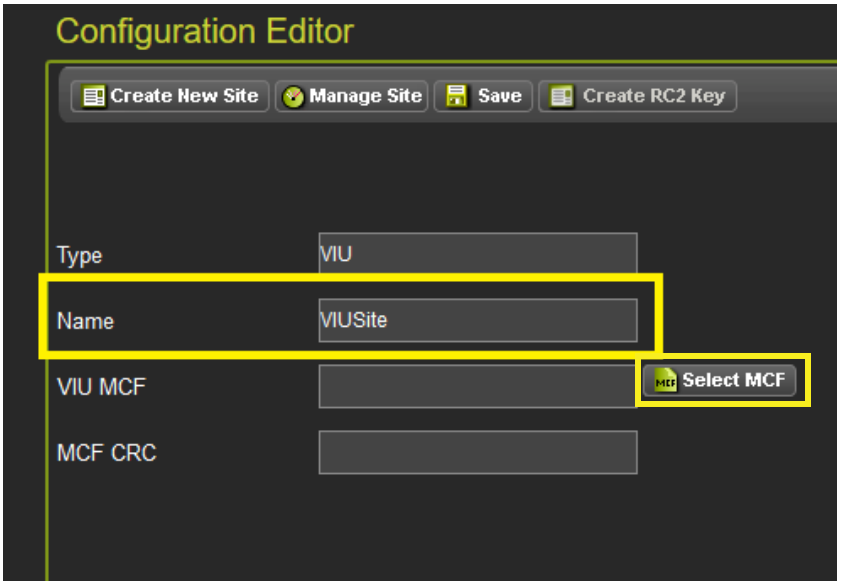


Figure 4-44 VIU Editor Window

3. Then press the **Select MCF** button shown above. The OCE will show the screen illustrated in the following figure. From here either select the drop-down arrow next to **Select MCF**, which will allow selection of an MCF that has already been used by the OCE, or use the **Browse** button to select the MCF.

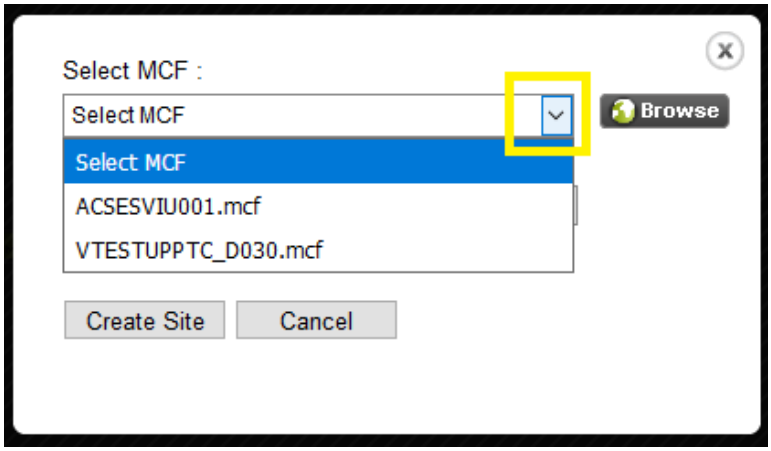


Figure 4-45 iVIU Select MCF

4. If the **Browse** button has been selected, obtain the MCF CRC from the MCF log file and enter it in the MCF CRC field. If the drop-down arrow is used, the MCF CRC will automatically be filled in.

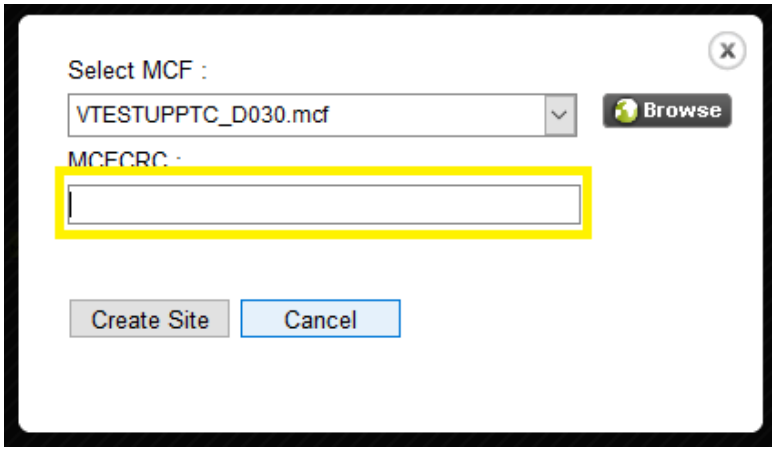


Figure 4-46 iVIU Enter MCF CRC

5. Select the **Create Site** button (shown above). The OCE will then process the MCF and return to the Configuration Editor screen and show the Non-Vital and Vital Configuration menus on the left.

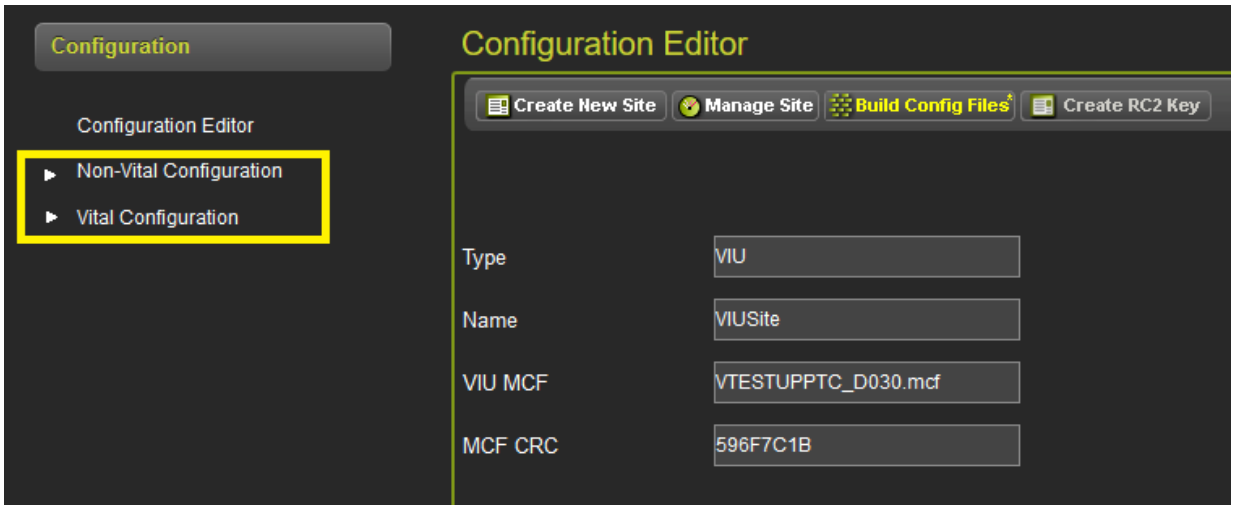


Figure 4-47 VIU Configuration

4.3.1 Vital Configuration

The information in the vital configuration menus for VIU site will vary considerably depending on the type of VIU used and its application. Some VIUs are used for PTC, other for ACSES, and some as general I/O controllers.

First, go to the Vital Configuration / Physical Configuration and select the required Physical Layout as shown in Figure 4-48. Because the Physical Layout value potentially affects all other vital menus and settings, check that the correct one is chosen before proceeding.

NOTE

NOTE

Each Physical Layout has its own sets of menus. The correct Physical Layout must be selected prior to setting any other Vital Configuration parameters or the Non-Vital Configuration PTC Device and Layout parameters.

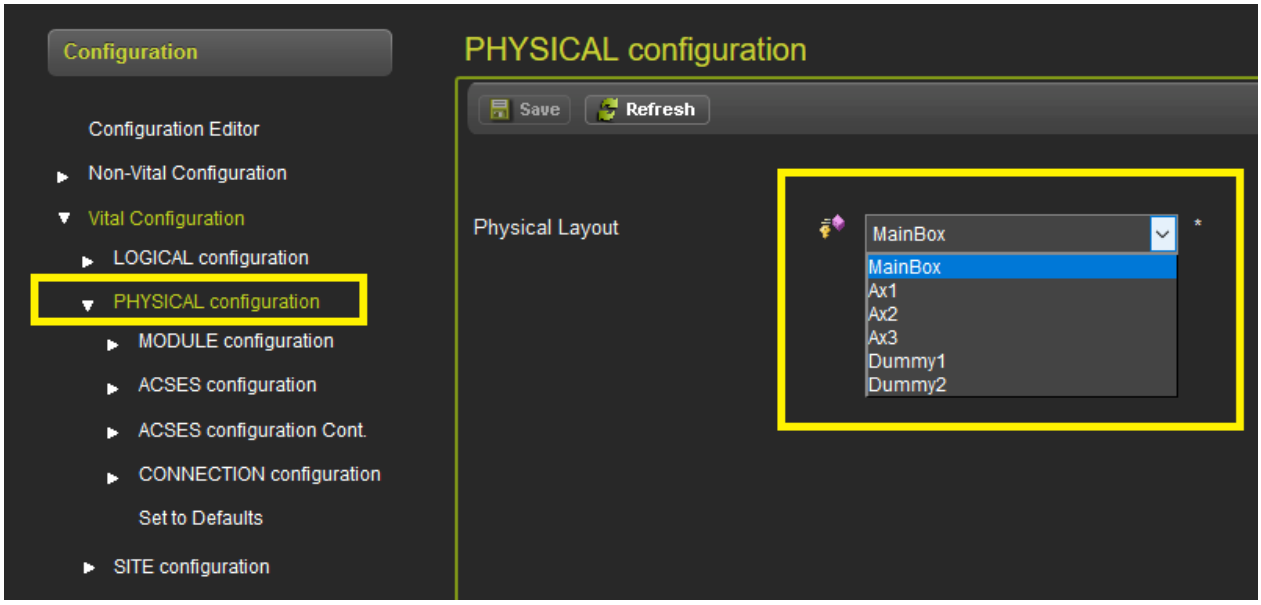


Figure 4-48 VIU Physical Configuration Selection

4.3.1.1 PTC Applications

Unlike in iVIU PTC GEO applications, the information for VIU has to be explicitly configured. Go through the Logical Configuration / Object Configuration and set the information needed for each signal, switch and block fault (hazard detector).

The order of the PTC devices reported in the PTC message can be changed. To change this order requires two separate steps:

a) Change the vital MCF parameters in the Physical Configuration ITC configurations which will cause the vital process to send out the message in the correct format.

b) Change the Message Layout under the Non-Vital Configuration / PTC menu, this will allow the VIU non-vital to interpret the PTC message so that it can display the PTC device status correctly and allow the WIU Config xml to be created.

To set the PTC device order for the vital configuration, first the correct number of PTC devices has to be set for each PTC device category. To enter this, adjust the PTC Item Count under the Vital Configuration / Physical Configuration / ITC Configuration / ITC_Signal_Configuration_1 to reflect the number of signals used.

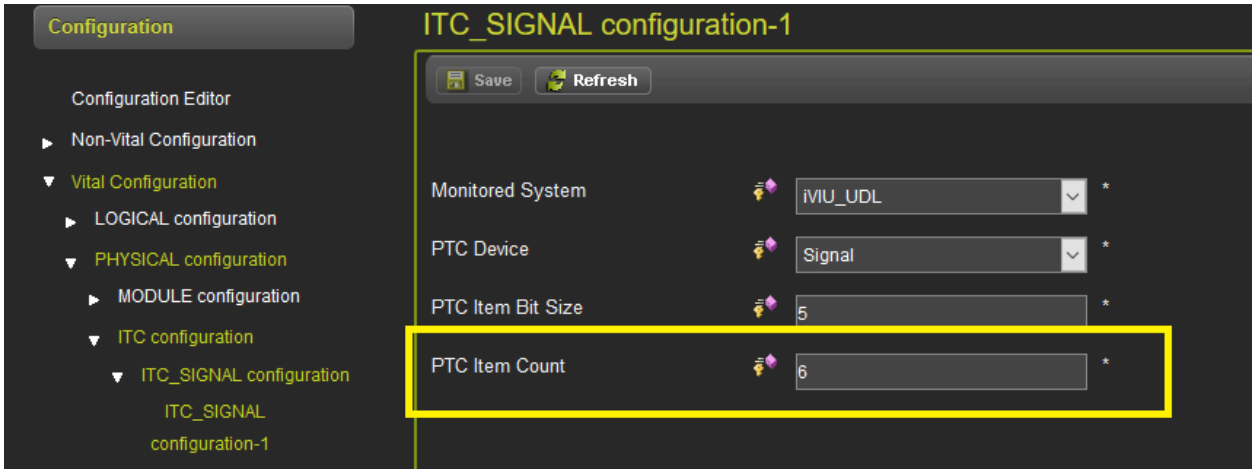


Figure 4-49 VIU Setting PTC Item Count

Similarly, set the PTC Item Count values on the ITC_SWITCH_Configuration_1 and ITC_BLKFLT_Configuration_1 menus to reflect the number of switches and block faults used.

After the PTC Item Count values are properly inputted, the PTC order fields have to be set correctly. These are set automatically when the message layout is adjusted under the Non-Vital Configuration / PTC / Message Layout menu. See section 4.3.2.9 for further details. The following figure illustrates the automatic message layout.

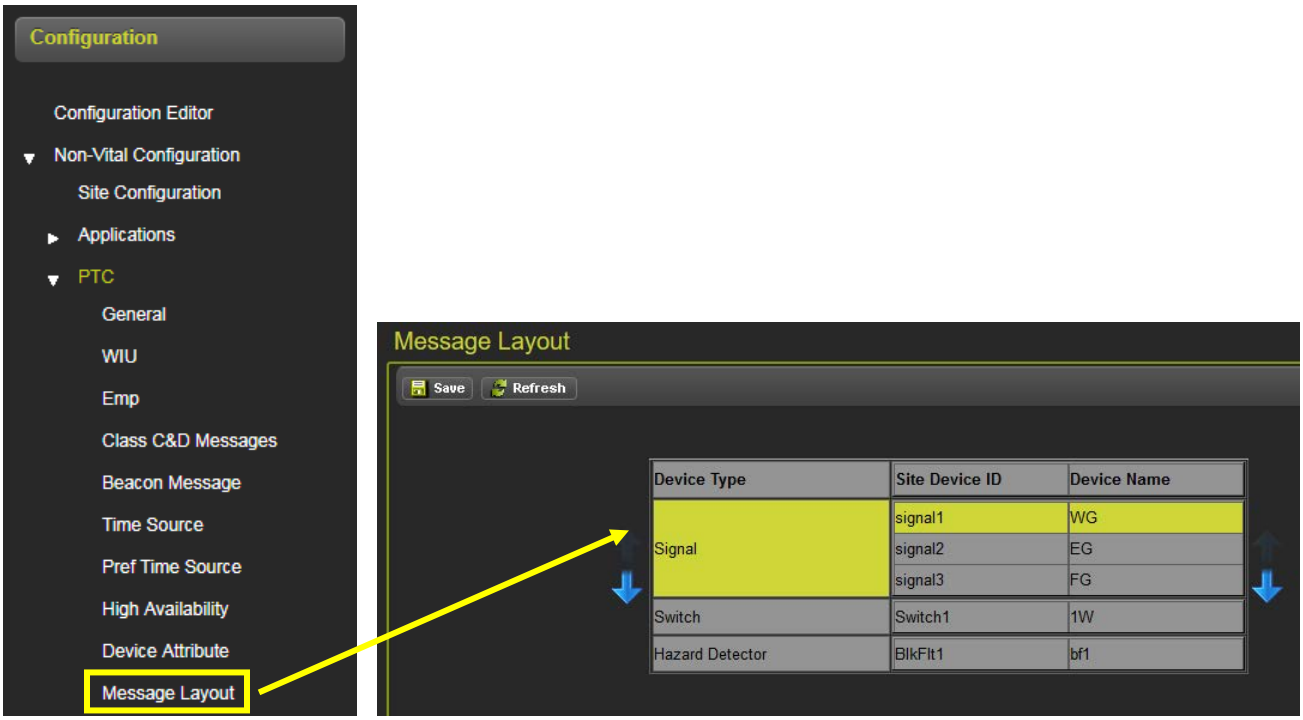


Figure 4-50 VIU Setting PTC Message Layout

The automatic message layout will result in the values illustrated in the following figure being set for PTC order.

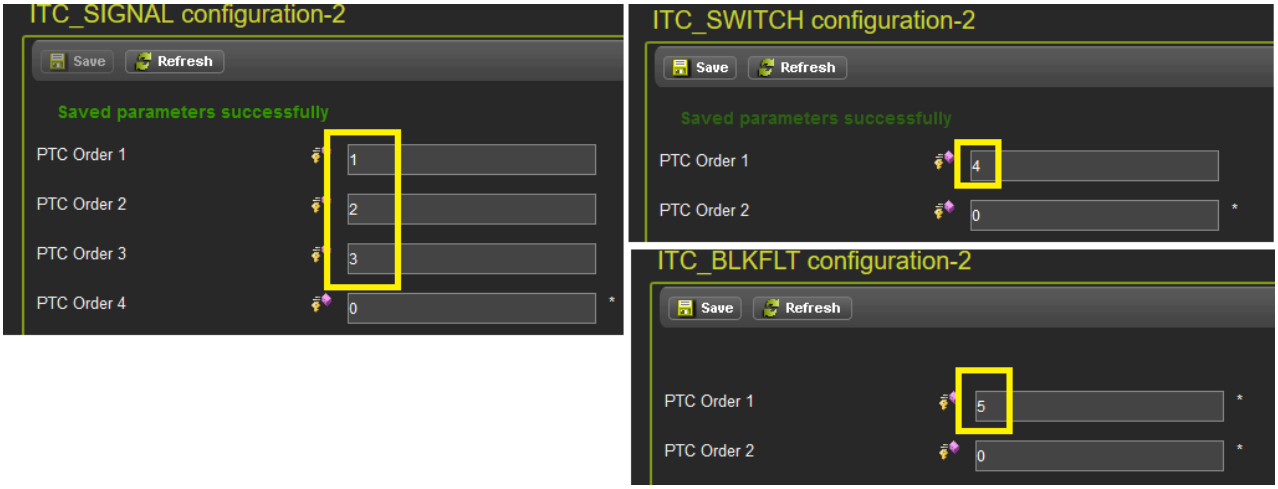


Figure 4-51 VIU Setting PTC Order

CAUTION

DO NOT MANUALLY EDIT THE PTC ORDER PARAMETERS UNDER VITAL CONFIGURATION/PHYSICAL CONFIGURATION/ITC CONFIGURATION AS THESE ARE SET BY CHANGING THE MESSAGE LAYOUT IN THE NON-VITAL CONFIGURATION/PTC CONFIGURATION.

To set the Beaconing parameters on the VIU, use the parameters under Vital Configuration / Physical Configuration / WIU Channel Configuration. If **Beacon Continuous** is set to No, the values of **Beacon Bit Time**, **Beacon End Time** and **Max Beacon Interval** are not used.

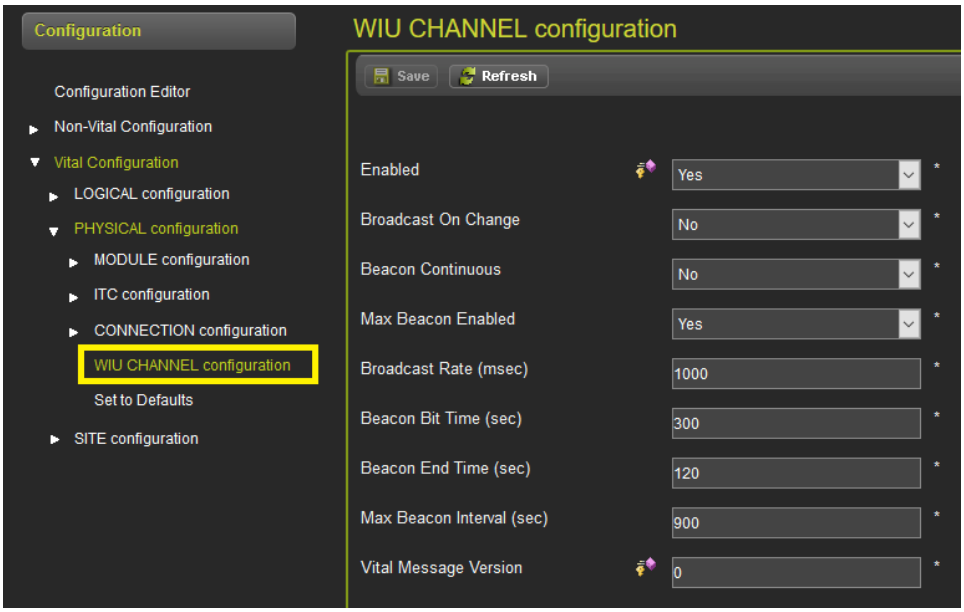


Figure 4-52 VIU WIU Channel Configuration

4.3.1.2 Vital ATCS Connections

When the VIU MCF has vital ATCS connections to other VIU modules, these connections can be configured under the PHYSICAL configuration / CONNECTION configuration, (see Figure 4-53). For further details on these parameters, reference the equipment manual.

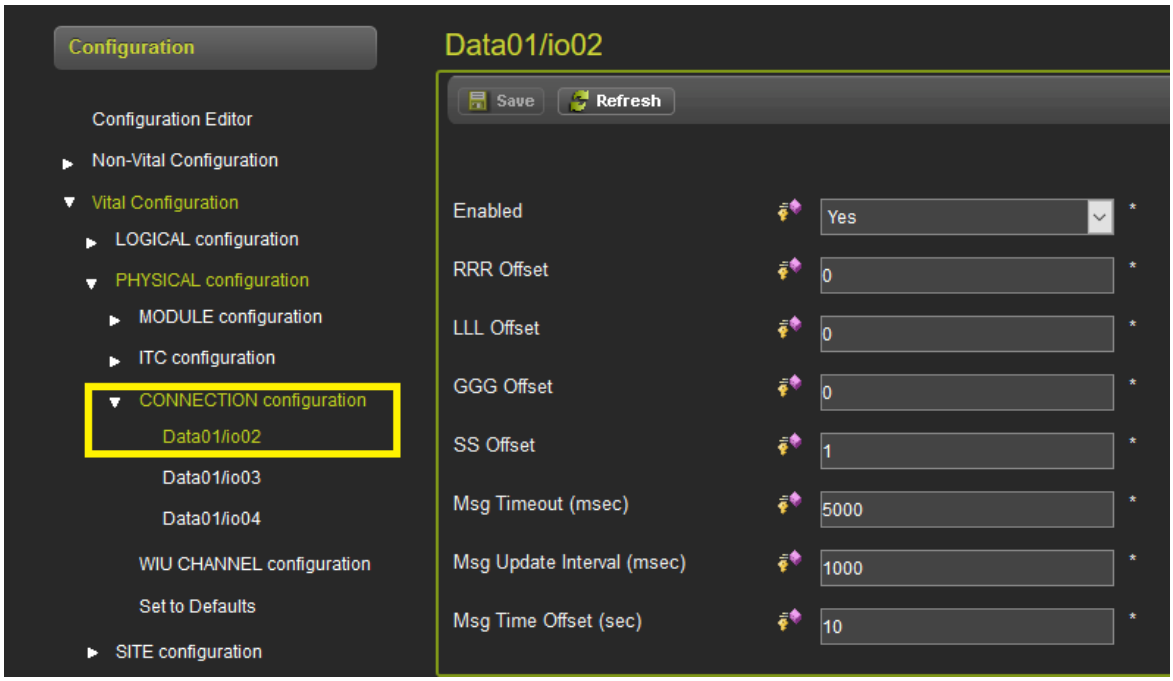


Figure 4-53 VIU Connection Configuration

4.3.1.3 ACSES Applications

When the VIU MCF is for an ACSES application (i.e. for a VIU20e) set up the routes and signals under the LOGICAL configuration / OBJECT configuration; see below for menu examples.

Figure 4-54 VIU20e Object Configuration

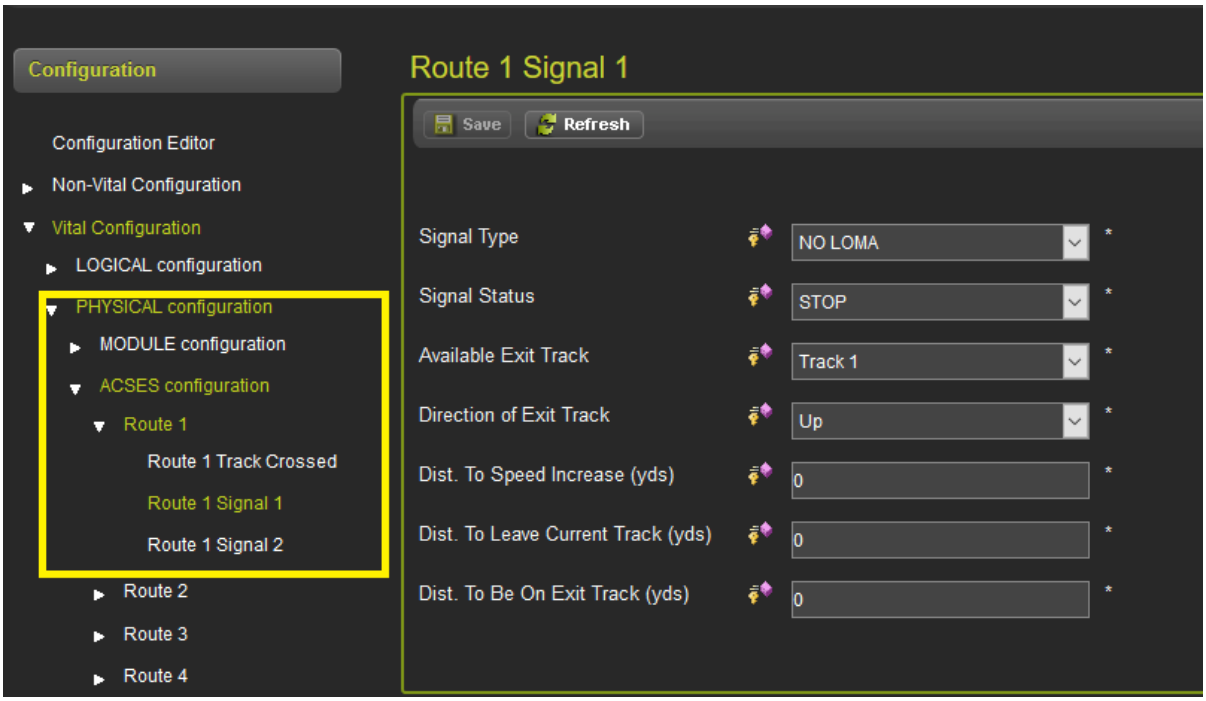


Figure 4-55 VIU20e ACSES Configuration

Set the ACSES Railroad Line Number under the PHYSICAL configuration/MODULE configuration/SLOT 1 menu.

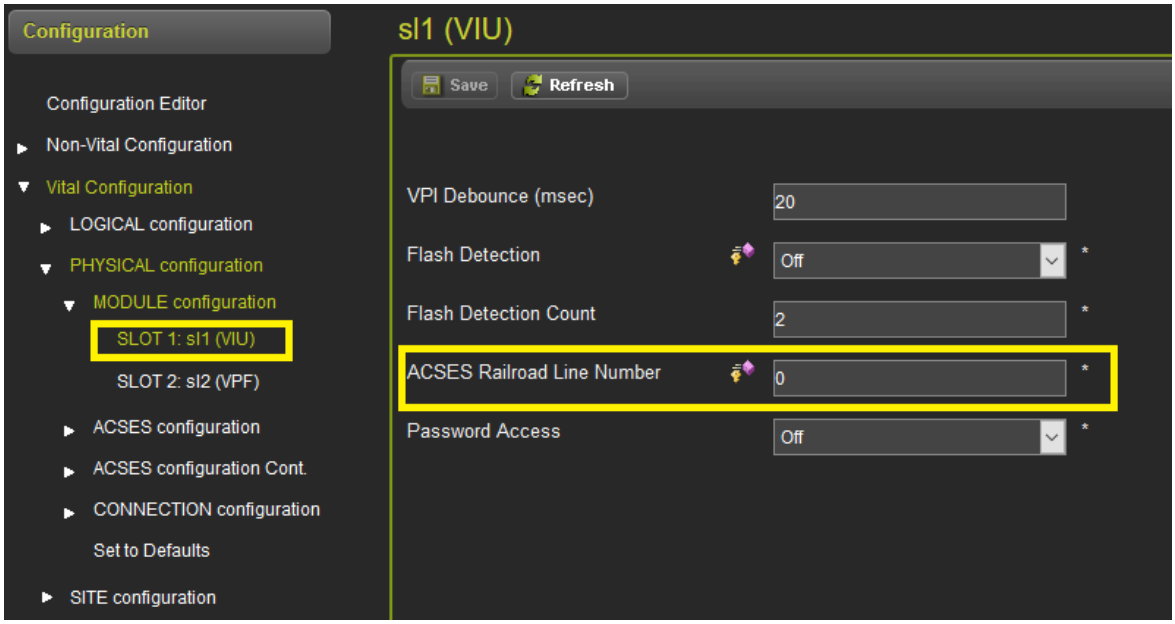


Figure 4-56 VIU20e ACSES Railroad Line Number

4.3.2 Non-Vital Configuration

The VIU Non-Vital Configuration has the options shown in the following figure; however, not all of these are needed for each type of application.

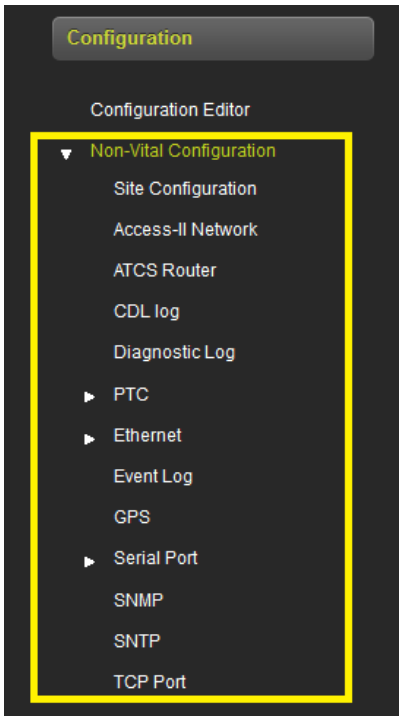


Figure 4-57 VIU20e Non-Vital Configuration

4.3.2.1 Site Configuration

On the Site Configuration screen set the site name (defaults to name chosen on Configuration Editor), milepost, DOT number (if used) and time zone.

NOTE

Unlike most other products, the MCF CRC for the VIU can be set on the Site Configuration page. In most other products the MCF CRC has to be entered by the user in the field.

The Site ATCS address must also be set for the VIU on this page.

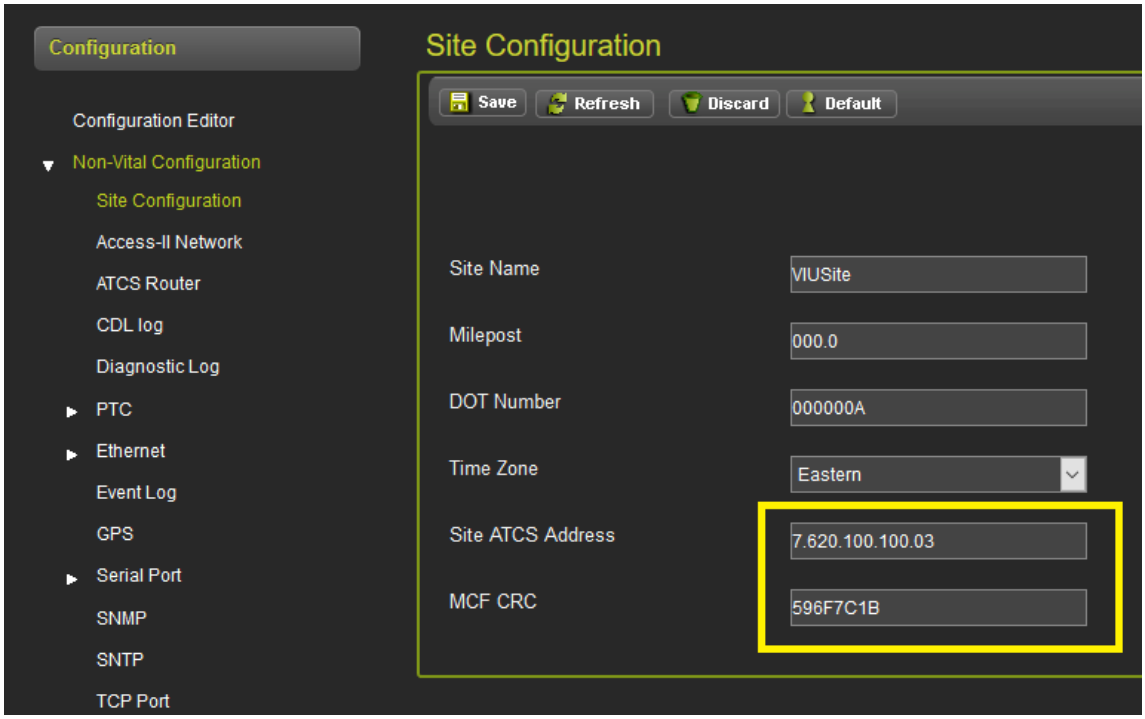


Figure 4-58 VIU Non-Vital Site Configuration

4.3.2.2 PTC

The VIU provides the following submenus for setting the non-vital PTC parameters. It may be useful to set up a template for VIU sites so that common settings for the PTC parameters can be used for all sites, see section 3.2.4 for details.

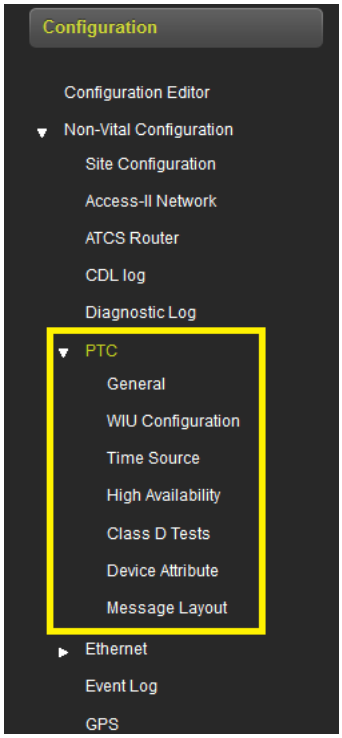


Figure 4-59 VIU Non-Vital PTC Configuration

4.3.2.3 PTC - General

Click on the General menu to open the WIU parameters screen. The parameters on this screen are used to fill in fields in the WIU Config xml file.

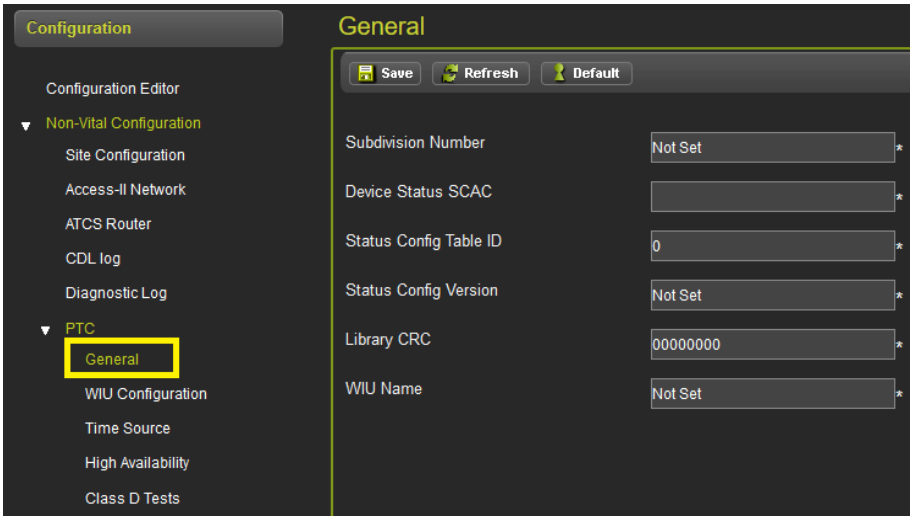


Figure 4-60 PTC Configuration – General Parameters

4.3.2.4 WIU Configuration

Click on the **WIU Configuration** menu to open the WIU Configuration parameters screen. Use the scroll bar on the left to see all the parameters.
The WIU Address field, shown in the yellow box below, is used to set the WIU Address in the vital payload portion of the PTC message. The HMAC and RC2Key (shown in the red box below) can also be entered on this screen. When it is entered, it is not displayed to the user, hence the user has to re-enter it to confirm it. Entering the RC2Key will cause an RC2Key.bin file to be created for the site. The railroad may choose to have a common RC2Key across many sites, or choose to have different personnel set the RC2 for the person setting up the site. In which case they can use the Create RC2Key button in the Configuration Editor and create the RC2Key independently of a specific site.

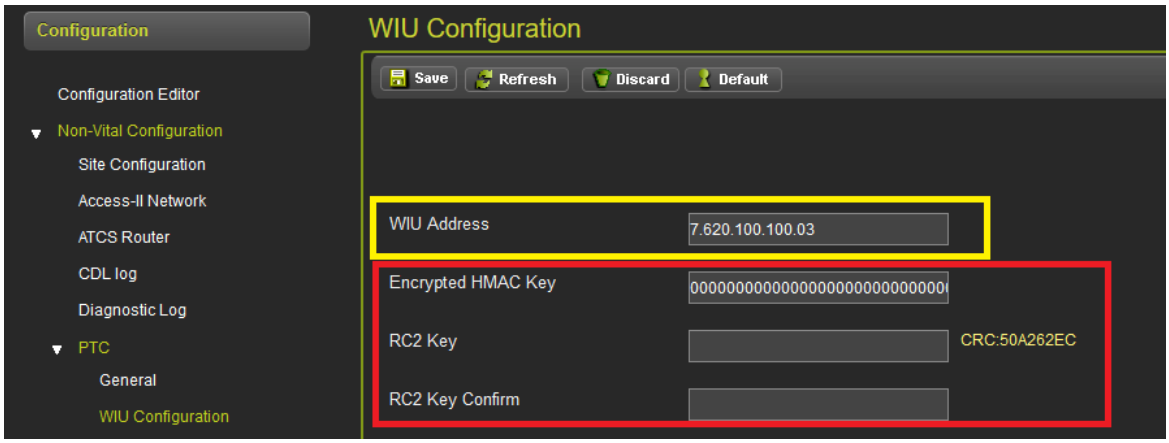


Figure 4-61 PTC Configuration – WIU Configuration

The fields shown in the green box below are used to set values in the EMP header fields in the PTC message.

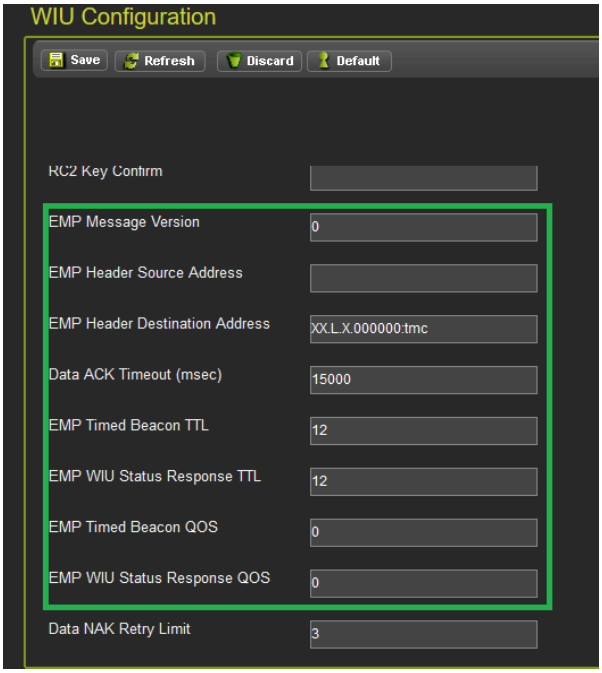


Figure 4-62 PTC Configuration – WIU Configuration EMP Parameters

The fields shown in the blue box below are used to configure the class D connection.

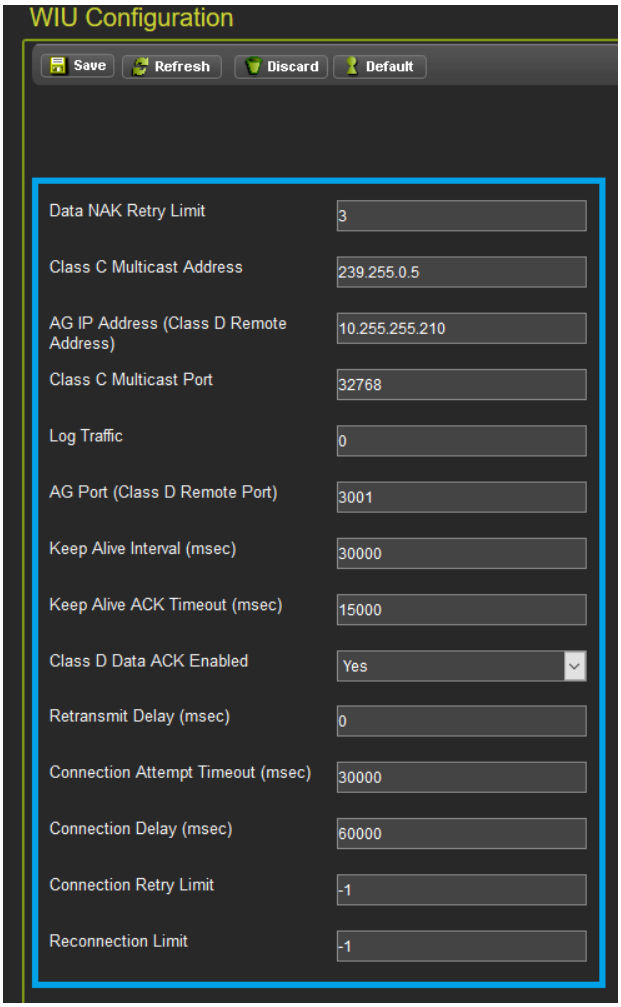


Figure 4-63 PTC Configuration - WIU Configuration Class D Parameters

4.3.2.5 PTC – Time Source

Click on the **Time Source Configuration** menu to open the screen where the preferred time source can be set up. When Preferred Time Source Enable is set to **Yes**, select up to six separate time sources.

NOTE

NOTE

The choice of which type of time source is used in VIU is done on the Non-Vital Configuration / GPS screen.

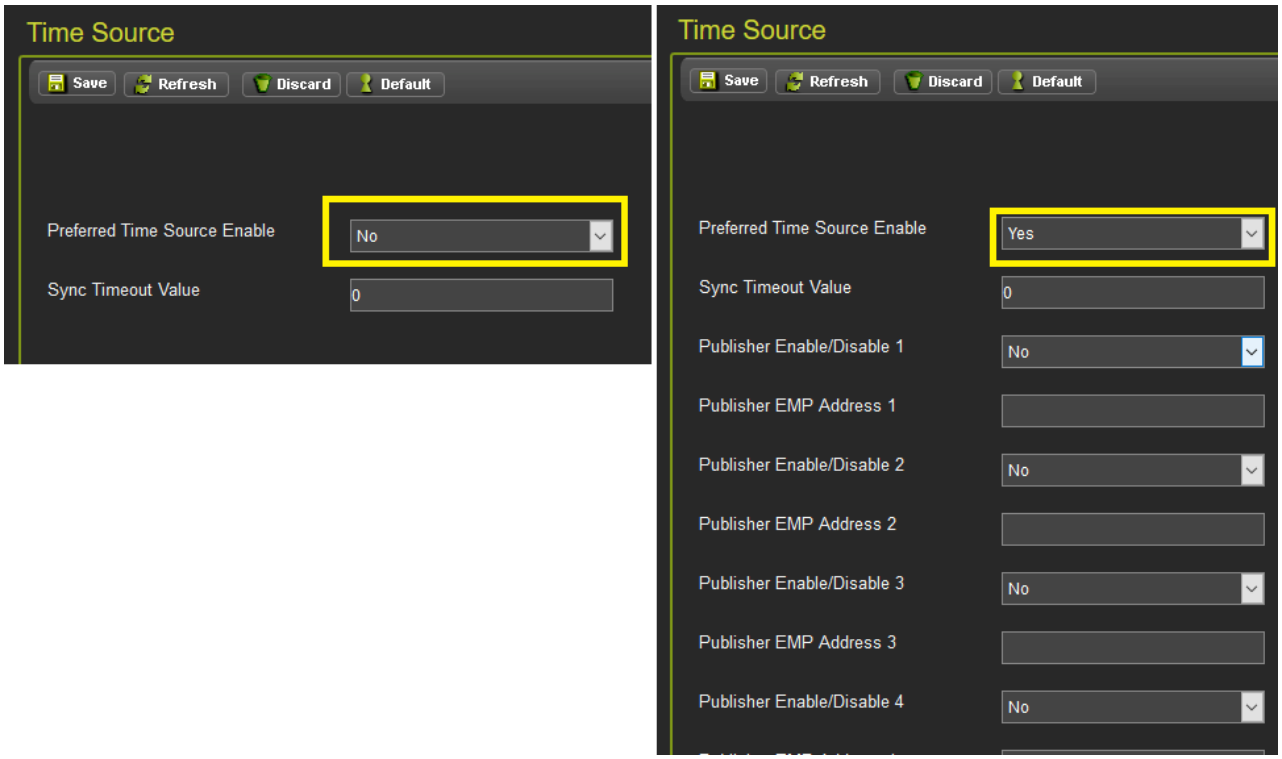


Figure 4-64 PTC Configuration - Time Source

4.3.2.6 PTC – High Availability

Click on the High Availability Configuration menu to open the screen where the high availability options can be set. When Enable/Disable HA is set to **Yes**, up to 12 separate servers can be set up. In IP Name/Range fields, either a single IP address (e.g. 192.168.255.10) can be entered or a range of IP addresses separated with a dash, e.g. 192.168.255.10-192.168.255.20.

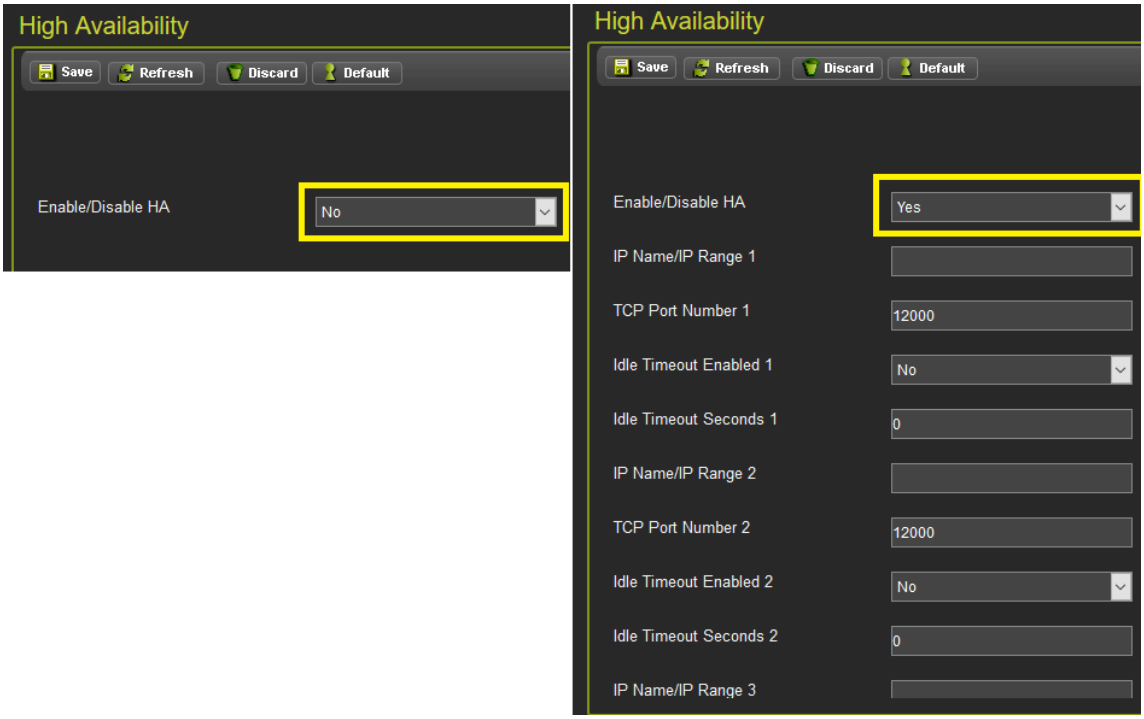


Figure 4-65 PTC Configuration - High Availability

4.3.2.7 PTC – Class D Tests

Click on the Class D Test to configure the Class D Test options.

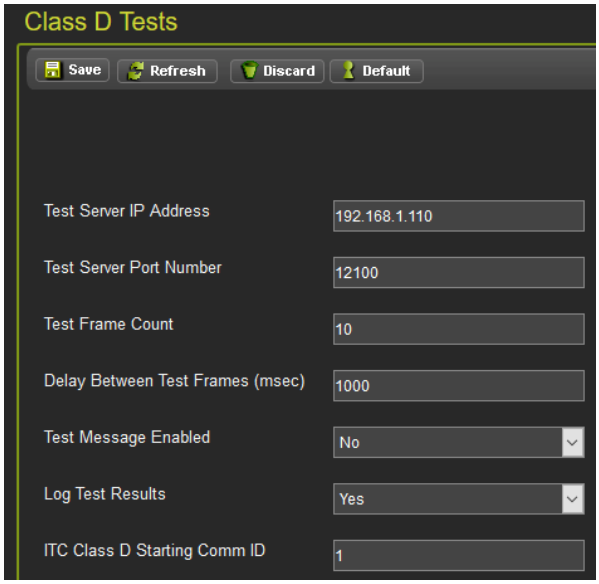


Figure 4-66 PTC Configuration - Class D Tests

4.3.2.8 PTC – Device Attributes

The PTC/Device attributes screen is used to define which PTC Devices are being used.

NOTE

In VIU PTC applications the PTC devices have to be created in the non-vital configuration independent of the vital configuration.

Use the **Add** buttons shown below to create specific types of PTC device. The number of PTC devices must match that defined in the vital configuration. Fill in the site device ID, device names, and set the other attributes. These fields are used to fill in the WIU Config xml file.

To delete a PTC device that has already being added, click on the X under the add column for that device, the press the **Save** button.

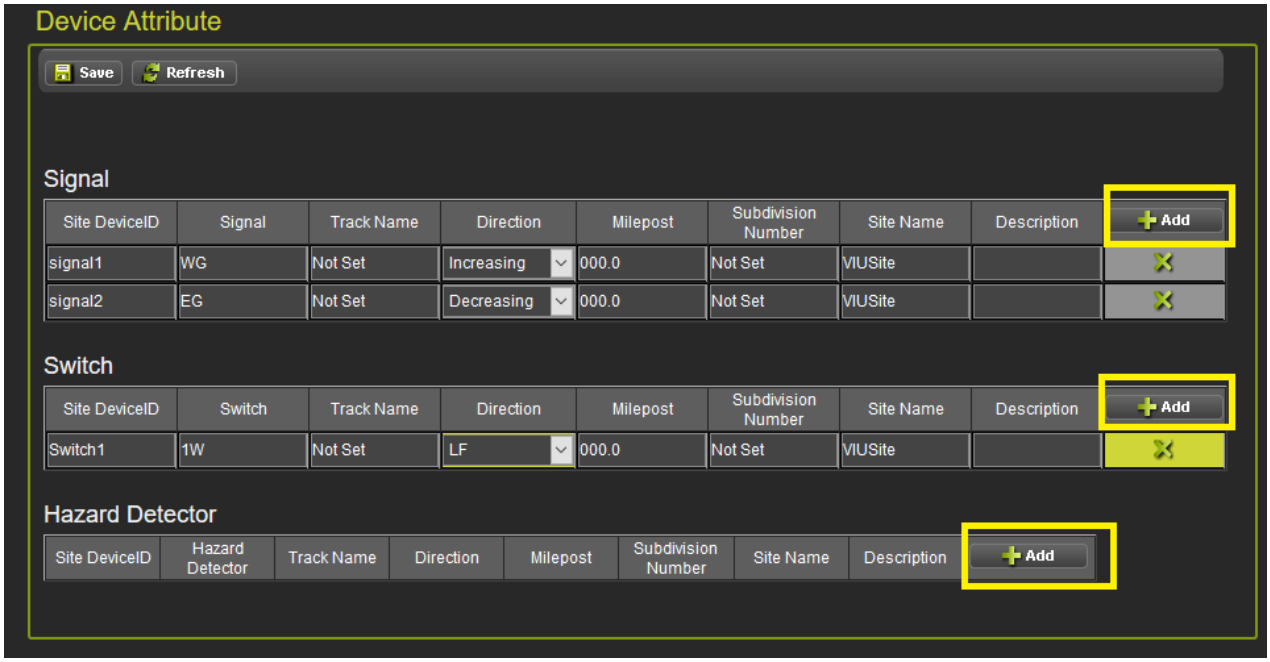


Figure 4-67 PTC Configuration - Device Attribute

4.3.2.9 PTC – Message Layout

The PTC / Message Layout screen displays the PTC devices included in the WIU message. This screen allows the user to specify the layout of the WIU message by rearranging the positions of the PTC Devices in the message (see Section 5.2.3.7 for further details). The user can choose which type of PTC device is reported first: signal, switch, hazard detector. The user can choose the order of the signals from within the block of signals. Use the arrows on the left (shown in yellow box) to change the order of the device types, and arrows on the right (in green box) to change the order of the specific devices within that type.

Select the **Save** button to change the new values.

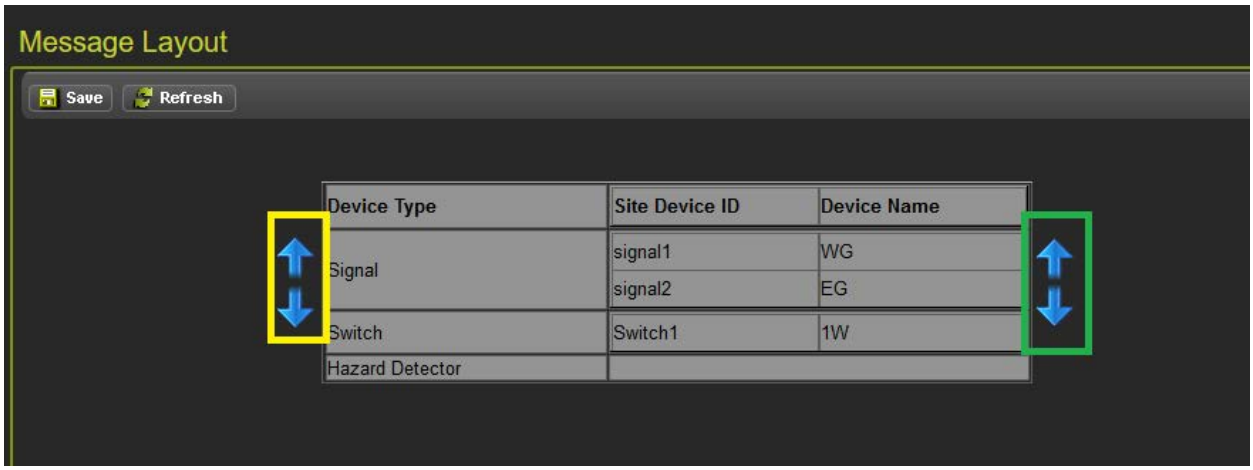


Figure 4-68 PTC Configuration - Message Layout

CAUTION

CHANGING THE ORDER OF DEVICES IN THE MESSAGE LAYOUT WILL AFFECT THE VALUES OF THE VITAL CONFIGURATION/ITC CONFIGURATION PARAMETERS.

The ITC configuration parameters under the vital configuration menu are used by the vital processor to define the layout of WIU message. When the message layout is changed using the blue arrows above, the OCE will automatically update the ITC configuration parameters to set the required message format.

NOTE

If the message layout is changed, the vital configuration must be re-built using the Configuration Editor/Build Config Files.

4.3.2.10 Ethernet Configuration

To configure the Laptop Ethernet port or Ethernet Ports one and two, select the appropriate submenu under Non-Vital Configuration / Ethernet.

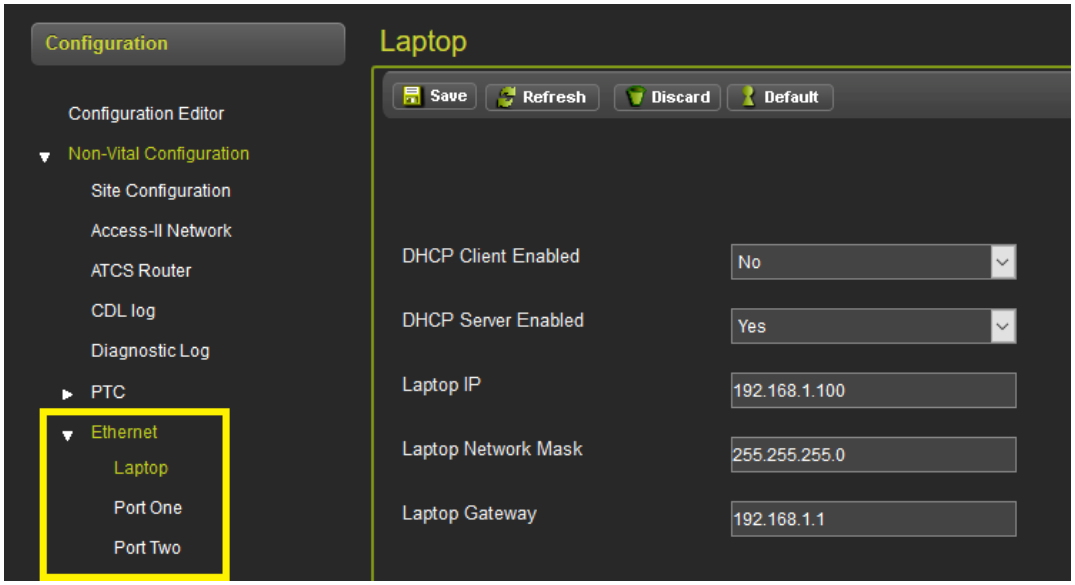


Figure 4-69 Non-Vital Configuration - Ethernet

4.3.2.11 Event Log

The VIU can be set up so that all the VIU modules on one Ethernet network log their events into one specified VIU module's event log. From the event log menu, set up the IP address of the VIU that is to provide the consolidated log. This address does not need to be set in VIU module that has the consolidated log.

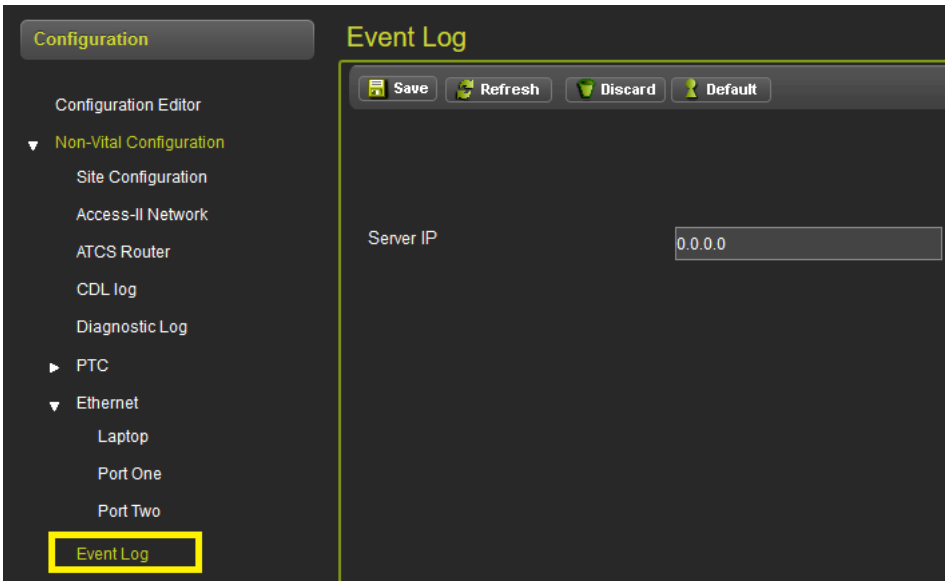


Figure 4-70 Non-Vital Configuration - Event Log

4.3.2.12 GPS

Use the GPS menu to select the options for the time source used by the VIU. The default option for the GPS time source is to use the VIU's own internal GPS. In practice, the more common options for PTC and ACSES system are:

- External Via Class C/D messages
- SNTP Client

If SNTP is selected, the parameters on the Non-Vital Configuration / SNTP page will need completing as well.

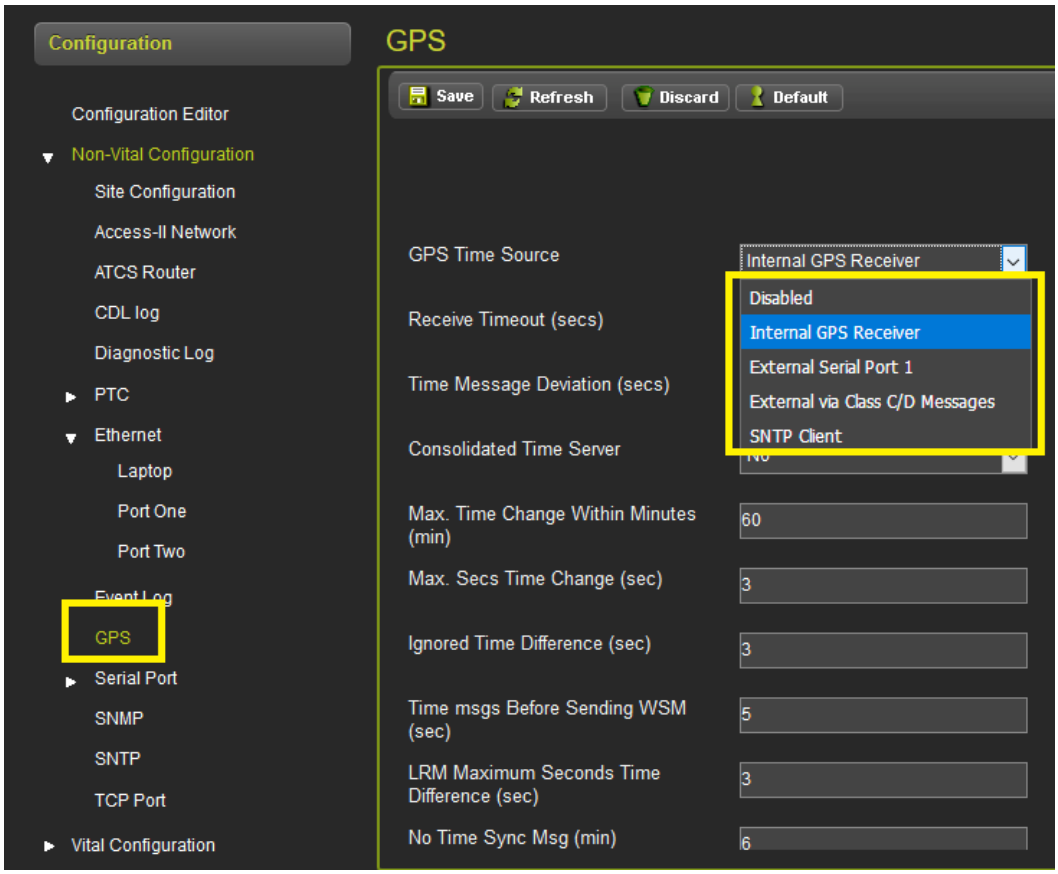


Figure 4-71 Non-Vital Configuration – GPS

4.3.2.13 Serial Port

Use the Serial Port menu to select the options for the Laptop Serial Port and Serial Port.

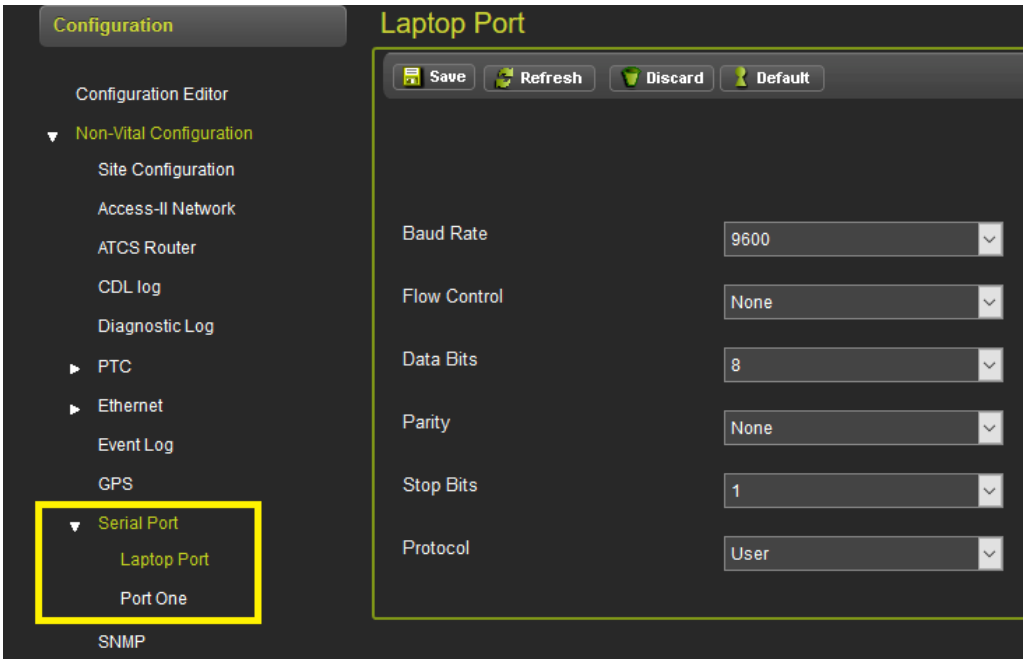


Figure 4-72 Non-Vital Configuration - Serial Port

4.3.2.14 SNMP

Use the SNMP menu to set the connection information from the VIU to the back office for sending SNMP based information.

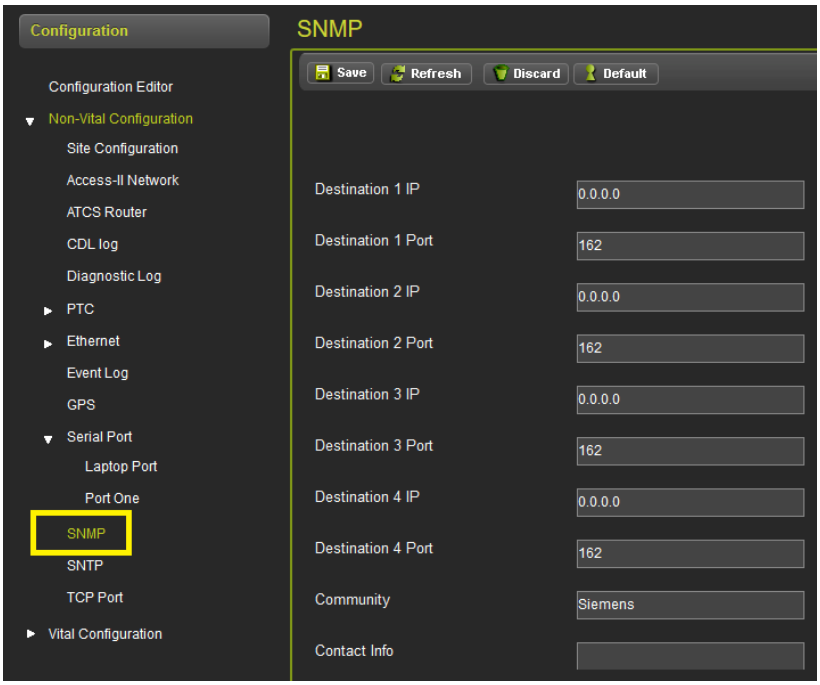


Figure 4-73 Non-Vital Configuration – SNMP

4.3.2.15 SNTP

If the SNTP Client has been selected as the GPS Time Source (see section 4.3.2.12) use the SNTP menu to set associate SNTP parameters. If GPS Time Source is not the SNTP, these parameters are not used.

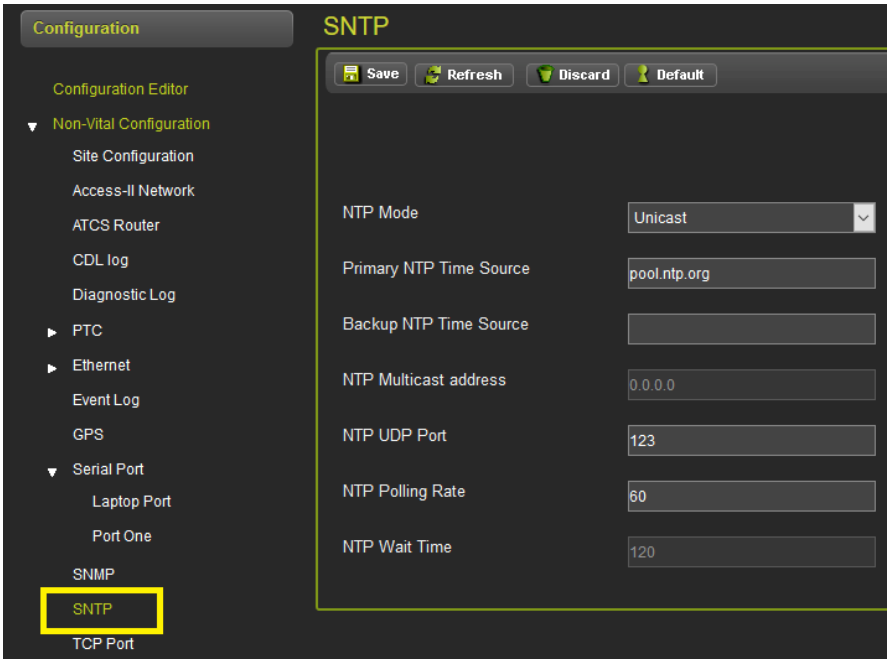


Figure 4-74 Non-Vital Configuration – SNTP

4.3.2.16 TCP

Use the TCP menu to set parameters related to AServer connectivity, see VIU manual for details.

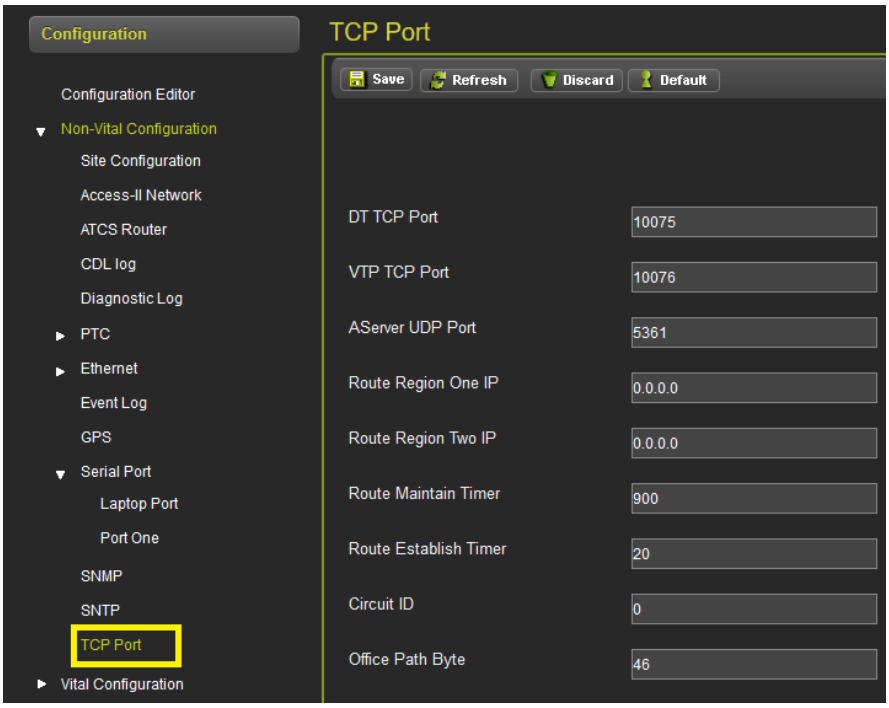


Figure 4-75 Non-Vital Configuration - TCP

4.3.3 Building Configuration Files

After the configuration values in the Non-Vital and Vital Configuration have been entered, select the **Build Config Files** button shown below. After a few seconds the OCE will show a message indicating Build Created Successfully.

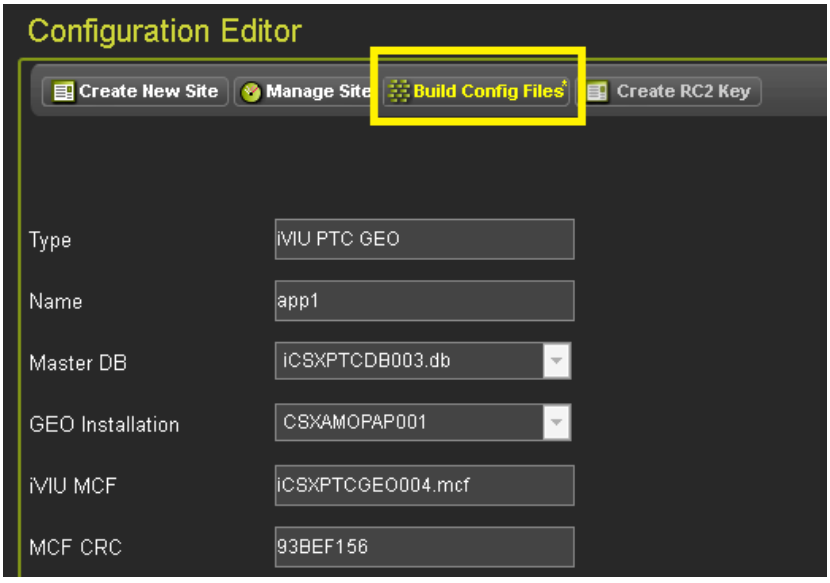


Figure 4-76 Build Config Files

The OCE will then show the Config Reports button. To view the report, click the button and the file can be either downloaded or viewed.

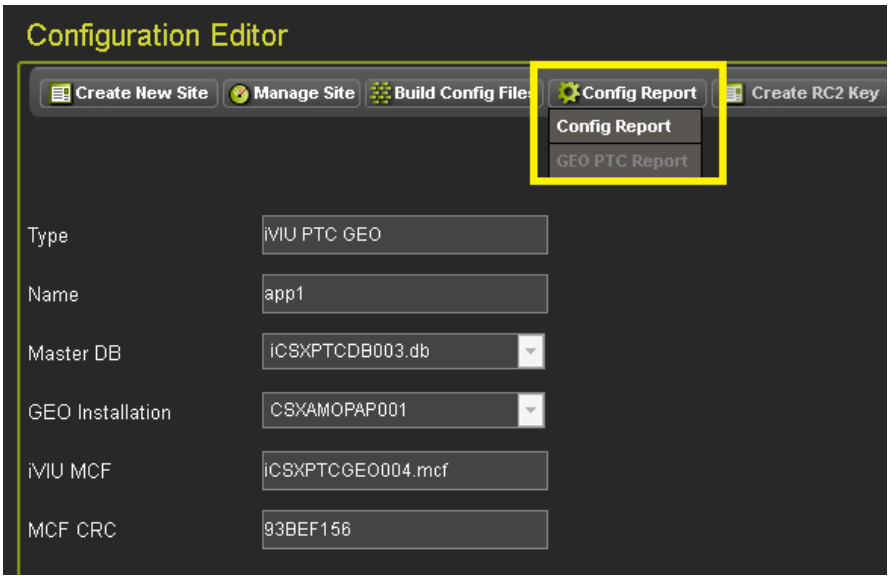


Figure 4-77 Config Reports Button

WARNING

THE CONFIGURATION REPORT MUST BE CHECKED TO ENSURE THAT THE PARAMETERS THAT AFFECT SAFETY ARE CORRECTLY SET.

At the end of the configuration report, the UCN for the location is printed. This will need to be entered into the unit in the field via the Web UI or Local UI. To ensure that the correct configuration is downloaded into the correct site, it is not downloaded automatically as part of the ZIP file. The report also contains the PTC UCN, this also will need to be manually set for the equipment in the field if the iVIU is used in a PTC application. The PTC UCN will be 0 for a non-PTC application.

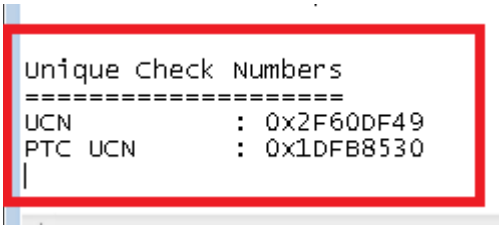


Figure 4-78 UCN/PTC UCN in Configuration Report

4.4 GEO SITES

The OCE is used in GEO applications:

- To obtain the UCN for the specific GEO installation
- To obtain the configuration report containing the configuration settings

NOTE

NOTE

The OCE 2.6.3 does not support the older Non-Appliance Model GEO applications.

The following procedure will provide step-by-step instructions on building a GEO Site.

1. Click on the **Create New Site** button and select GEO from the drop-down menu.

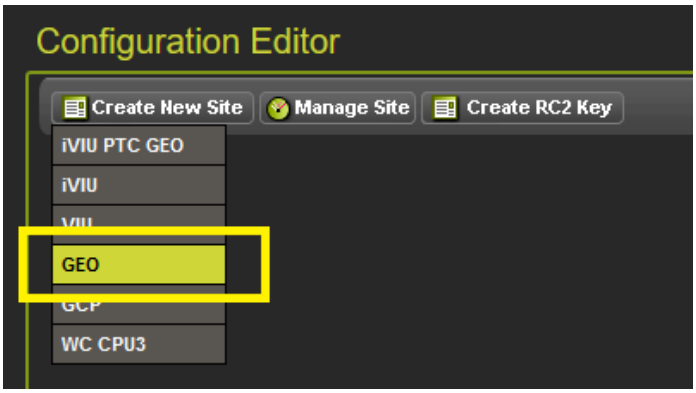


Figure 4-79 Creating a GEO Site

2. The OCE will show the following screen where the site name and MCF details can be entered. First enter the site name (up to 20 characters) then press the **Select MCF** button.

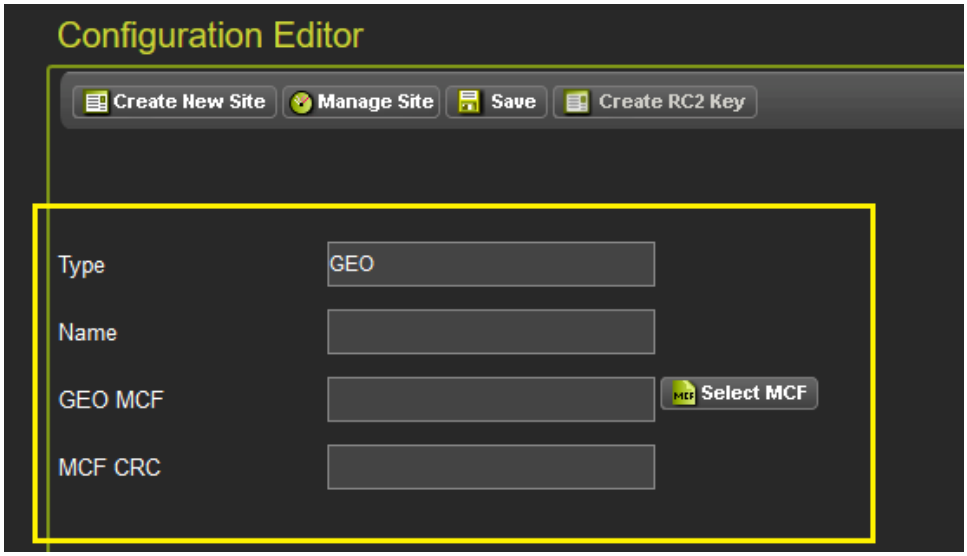


Figure 4-80 GEO Site Configuration Editor

3. On the MCF Selection screen either select a new MCF using the browse button, or use the drop-down arrow (right) which will show MCFs that have already been used before by the OCE.

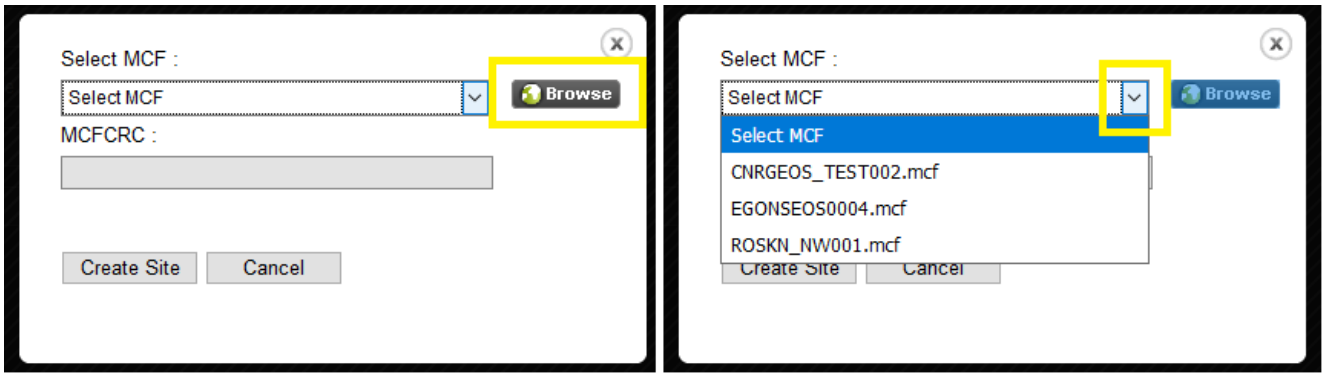


Figure 4-81 Selecting MCF

4. If the browse button is used, enter the MCF CRC obtained from the GEO MCF log file. The MCF is chosen from the drop-down menu, the OCE will automatically fill in the MCF CRC. Next press the **Create Site** button (shown above). The OCE will process the files for a few seconds then return to the main Configuration Editor screen.

NOTE

NOTE

When creating a new site OCE will ask for an MCF. The OCE keeps a repository of MCFs by site type, so if an MCF has been previously used or has been imported using the File Manager, the MCF will appear in the drop-down menu. After selecting the appropriate MCF, OCE will automatically fill in the MCF CRC if the .log file is present in the repository. If the MCF has not been used before it will be necessary to click on the Browse button to find the MCF and manually enter the MCF CRC which is obtained from the MCF's log file. The OCE will then copy the MCF over to its repository, so that if it is used again, it will be accessible from the drop-down menu.

Prior to setting parameters, go to the Vital Configuration / Physical Configuration and select the required Physical Layout as shown in Figure 4-82. Because the Physical Layout value potentially may affect all other vital menus and settings, check that the correct one is chosen before proceeding.

NOTE

NOTE

Each Physical Layout has its own sets of menus. The correct Physical Layout must be selected prior to setting any other Vital Configuration parameters.

Figure 4-82 GEO Physical Configuration Selection

Next, go to the Vital Configuration menu and change the parameters as necessary.

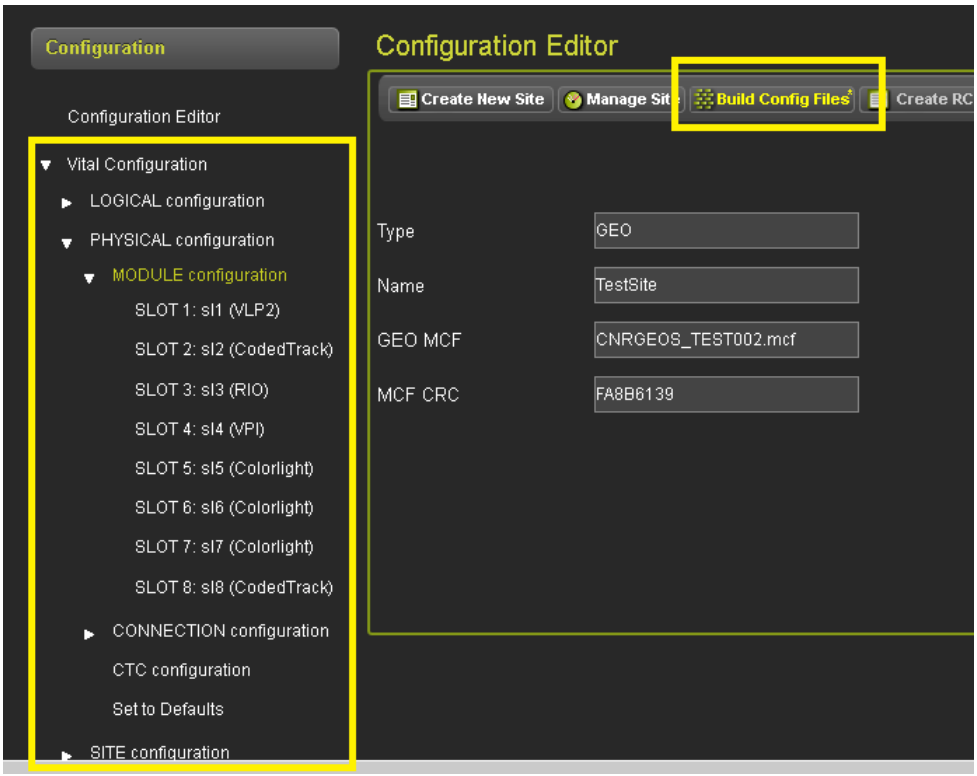


Figure 4-83 GEO Vital Configuration Menu

After all the Vital Configuration parameters have been entered and saved, create the build files by selecting the Build Config Files button (highlighted in Figure 4-83). The OCE will process the files for a few seconds then show a pop up message saying “Build Created Successfully.” Close this window and the OCE will now show the Config Report button. Select this to download the configuration report.

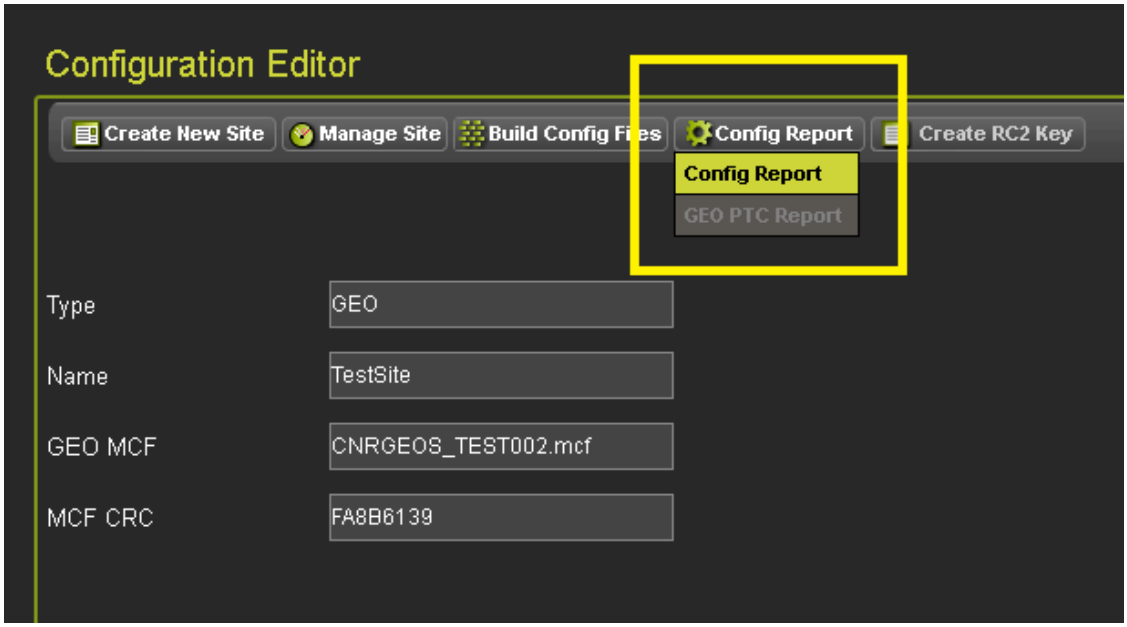


Figure 4-84 GEO Config Report

For GEO installations, the configuration properties have to be set in the field when connected to the GEO system according to the values on the configuration report, then the UCN entered.

The UCN can be viewed at the very end of the Configuration Report.

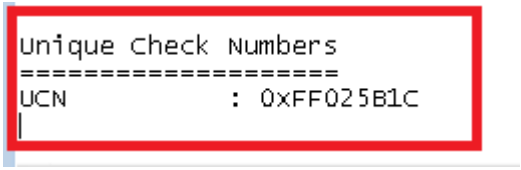


Figure 4-85 GEO Config Report UCN

NOTE

NOTE

For GEO installations, the configuration properties have to be set in the field when connected to the GEO system according to the values on the Configuration Report. After configuration of the GEO, the UCN can be entered.

4.5 GCP SITES

The OCE can be used to create a GCP4000 / GCP5000 / GCP3000+ or MS4000 installation. The OCE is used to:

- Set the vital MCF parameters from the GCP MCF
- Set other non-vital configuration parameters
- Select a CDL and answer the CDL setup questions
- Obtain the OCCN for the specific installation
- Obtain the configuration report containing the configuration settings
- Create the configuration files (PAC and ZIP files) that can be loaded onto the GCP using the Web UI or USB.
- Compare two PAC files to see the differences
- Create templates so that the same railroad specific parameters can be reused

Previously, the existing Diagnostic (DT) program was used to create a PAC file offline. This could be uploaded using the DT or Display Module into a GCP in order to program the GCP in the field. The PAC file could also be downloaded back from the GCP and opened in the DT.

The OCE also allows the user to create PAC files or read a PAC file from an existing GCP; however, the OCE also creates an installation ZIP file. This ZIP file contains the following:

- PAC file
- Selected GCP MCF that was used in PAC file
- Selected reports

The new Display module (A80485) or CPU III (A80903) allow the user to select the ZIP file, and this will first upload the MCF into the GCP and then upload the PAC file.

The railroad may find it more convenient to configuration manage the ZIP file rather than the PAC file, as the first file contains both the reports and PAC file itself. Because different railroads may have different requirements on what reports they want to keep, the OCE allows the user to select which reports are included in the ZIP file.

The following sections describe how to:

- Create a new GCP site by selecting the MCF (equivalent to how DT was used)
- Open an existing PAC file
- Use templates to set up railroad specific default values
- Compare PAC / ZIP files

4.5.1 Creating a New Site from MCF

1. Select GCP on the **Create New Site** drop menu shown in Figure 4-86.

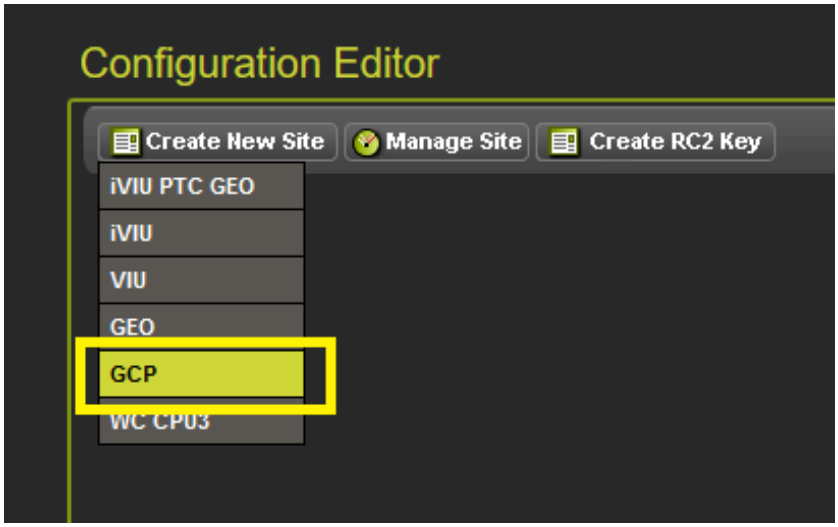


Figure 4-86 Creating a GCP Site

2. A Site Configuration Editor screen will appear with text boxes and drop-down menus for establishing the site Name, GCP MCF, and the MCF CRC. Enter the site name in the Name text box.

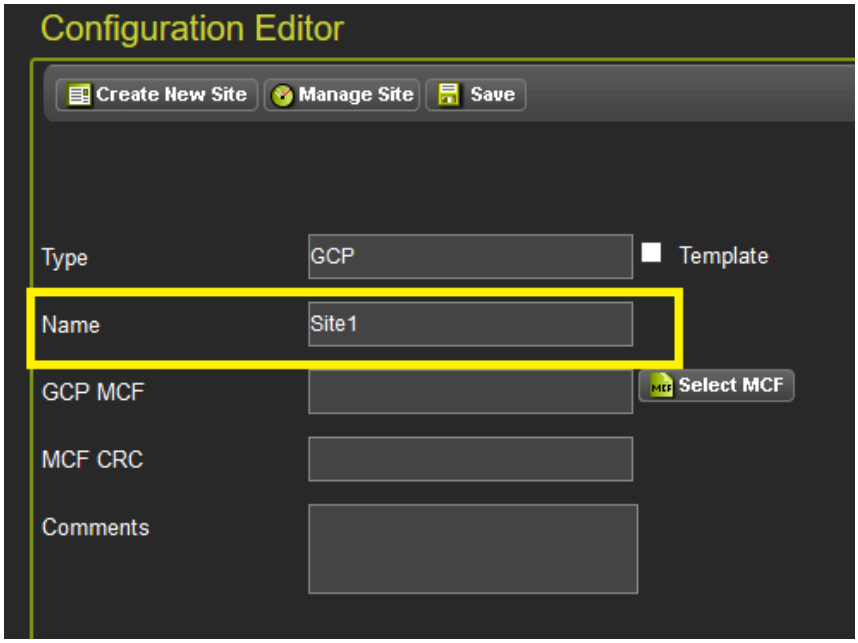


Figure 4-87 GCP Editor Window

3. The next parameter is selection of the GCP MCF file. When the **Select MCF** is chosen, the OCE opens the window illustrated in the following graphic.

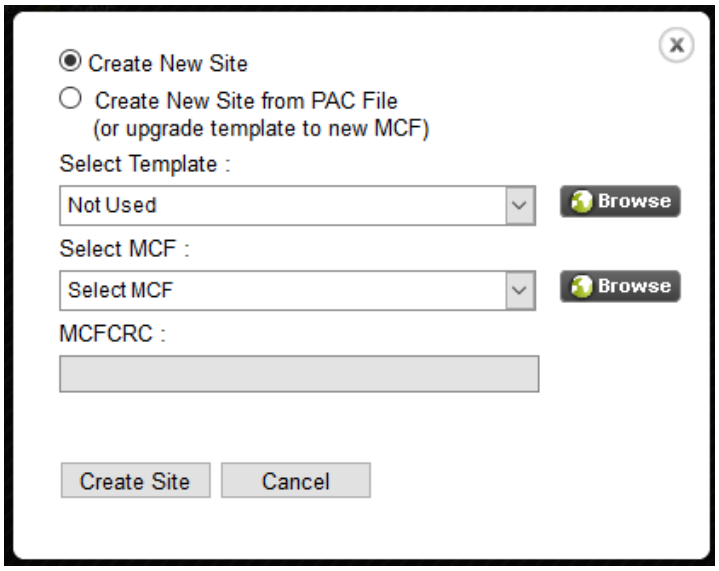


Figure 4-88 Create GCP Site Window

This window allows the new site to be created from either the MCF, or by selecting an existing PAC file that could have been created by the OCE or downloaded from a GCP.

The window also allows the user to choose a template they have created previously, see section 4.5.3 for details of creating and using templates.

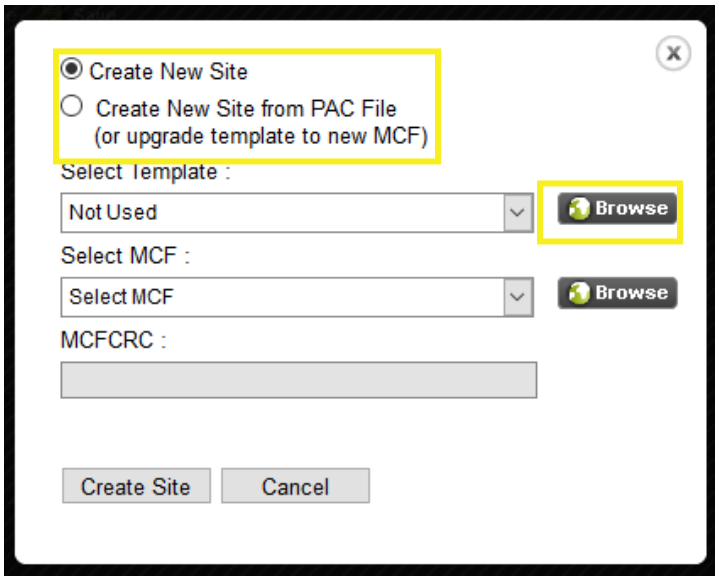


Figure 4-89 Create GCP from PAC File

Several options exist for site creation, the first addressed is creating a site based upon the MCF with no template.

Click the drop-down arrow on the **Select MCF** field; this will bring up a list of all the pre-defined MCFs that were installed with the OCE. The OCE will come installed with all the GCP MCFs available to date, if a new GCP MCF is required, use the browse button to find the MCF and enter its CRC. This will install the MCF, so that next time it is used it will be available in the drop-down list.

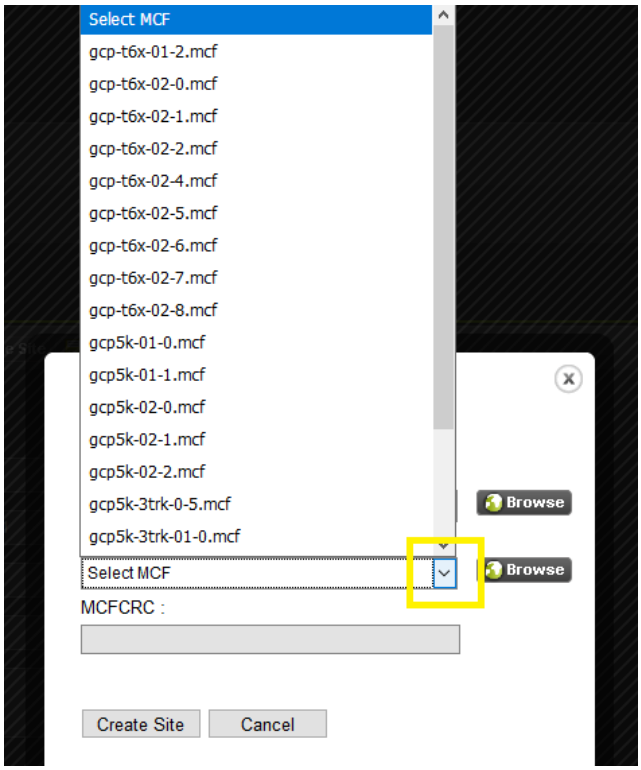


Figure 4-90 Select GCP MCF

Once the MCF has been selected, click **Create Site** and the OCE will then generate the site with the default configuration from the MCF.

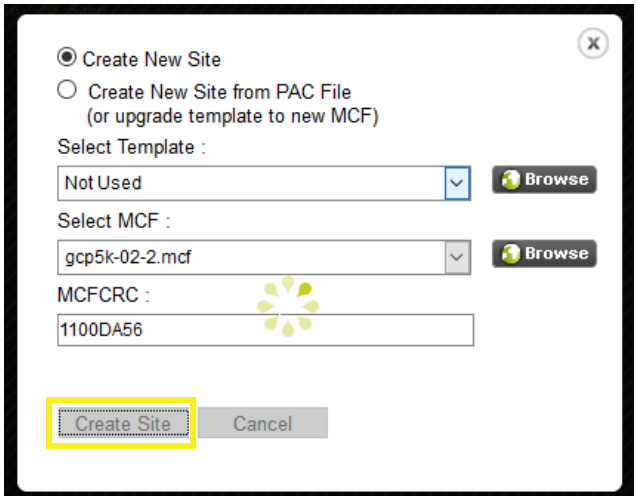


Figure 4-91 GCP MCF Selected

After a few seconds the OCE will go back to the Configuration Editor screen and show the available menus; for example Site Configuration, GCP programming, SEAR programming, Display Programming—the exact menus being displayed will depend on what type of MCF was selected: GCP4000, GCP5000, or GCP 3000+.

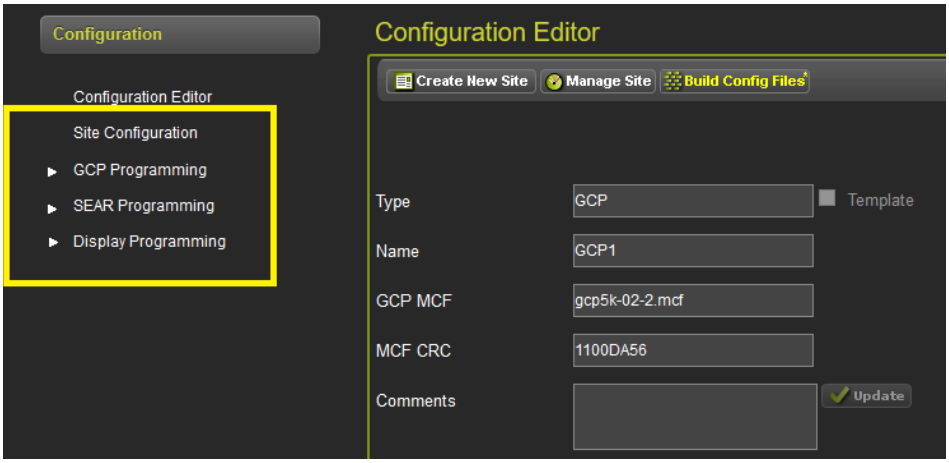


Figure 4-92 GCP Configuration Editor

4.5.1.1 GCP 4000 Sites

All the GCP 4000 Programming is done under the GCP Programming menu.

The first step in the GCP programming will be to set the Template from the Setup Wizard. Go to the TEMPLATE programming menu and select the appropriate template that best fits the geometry of the crossing being designed and press the **Save** button.

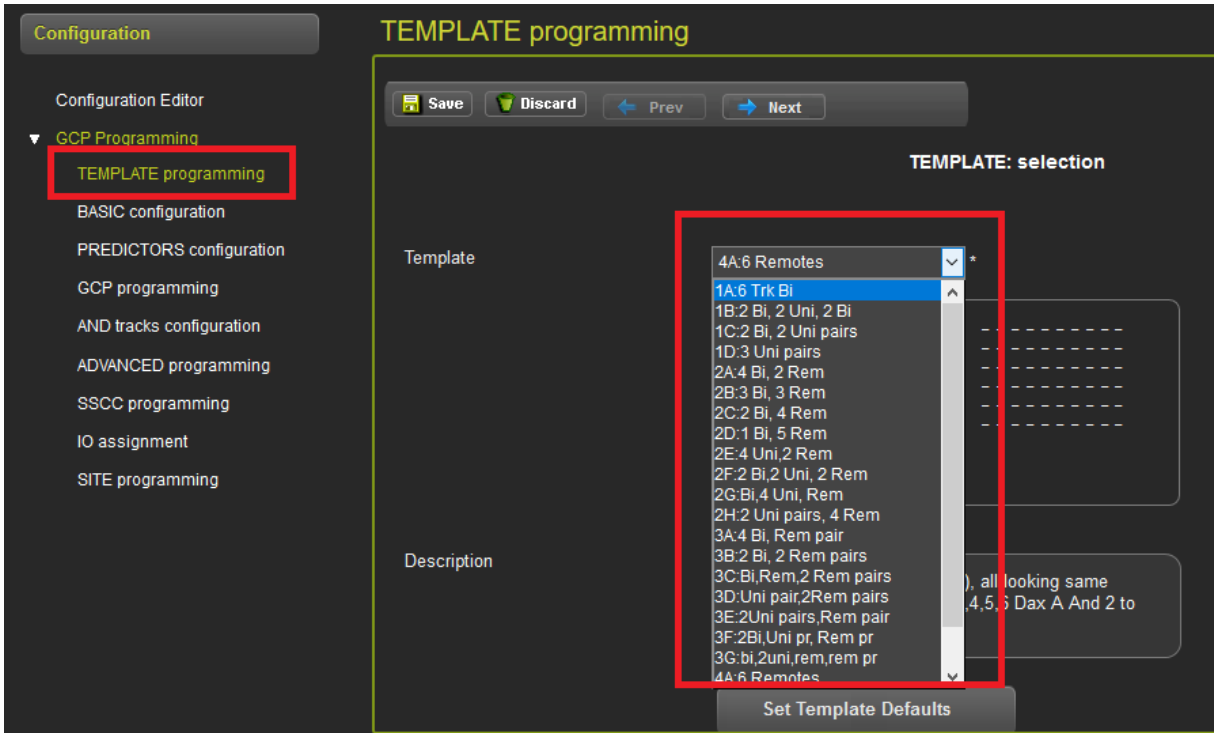


Figure 4-93 GCP4000: GCP Programming

The OCE will provide the warning illustrated in the figure below. Select **OK** to continue.

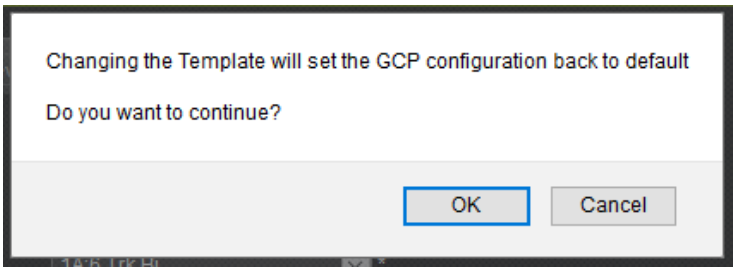


Figure 4-94 GCP4000: Template Change Warning

The OCE will show the messages indicating that the configuration is being set back to default. Each GCP MCF template has a specific set of default values and menus associated with it. When the template is changed, the GCP programming parameters are set back to the default values for this template so this value must be set before any other GCP Programming parameters can be changed.

NOTE

NOTE

The term: **Template** is used in two different contexts in the OCE. It is used:

1. in a general OCE sense, to define a set of default values that can be saved by the user and used across multiple sites
2. in a GCP MCF-specific sense, to select a specific layout and configuration of unidirectional and bidirectional tracks related to the geometry of a crossing

At this point the user can choose to go through each of the TEMPLATE menus under TEMPLATE programming as a way to set the parameters that are most likely to require setup for the crossing e.g. frequencies, and warning times. Use the **Next** and **Previous** buttons at the top of the template pages to move through each Template screen in a cyclic manner. When the last template page is reached, **Next** will go back to the first Template page.

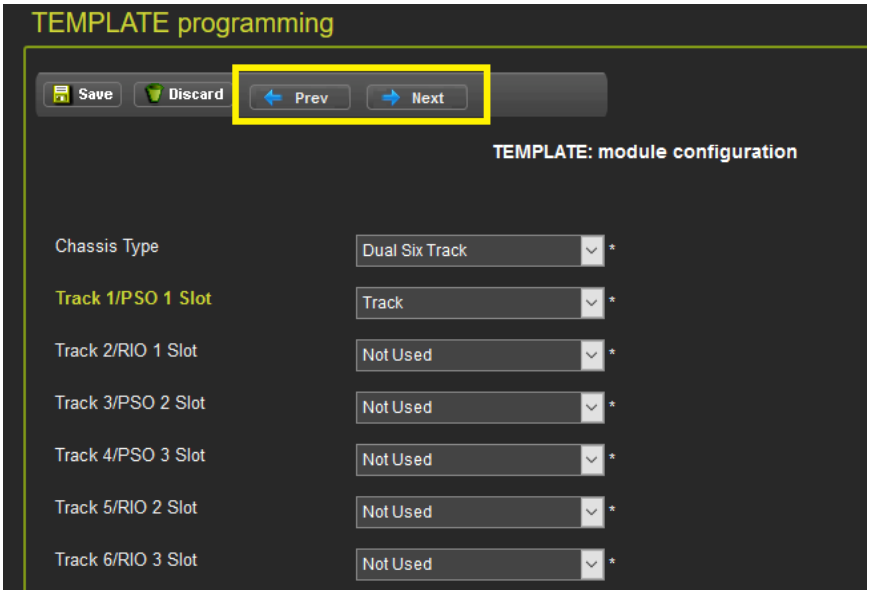


Figure 4-95 Template Parameters

To change parameters that are not included in the template menus, select the appropriate menus from the menu on the left of the screen and then press the **Next** button to get to the required page.

The **Next** button is designed so that starting on the Basic Configuration screen and pressing **Next** repeatedly will show each active screen until the final Site programming screen is shown. Pressing **Next** as this point goes to the Template page.

The **Prev** button is designed so that starting on the last screen (Site Programming) screen and pressing **Prev** repeatedly will cycle back and show each active screen until the Basic Configuration screen is shown. Pressing **Prev** at this point goes to the Last Template page.

The asterisk to the right of an item indicates that the parameter is set to its default value.

The ATCS Address and Location parameters are handled differently from the rest of the GCP Programming parameters.

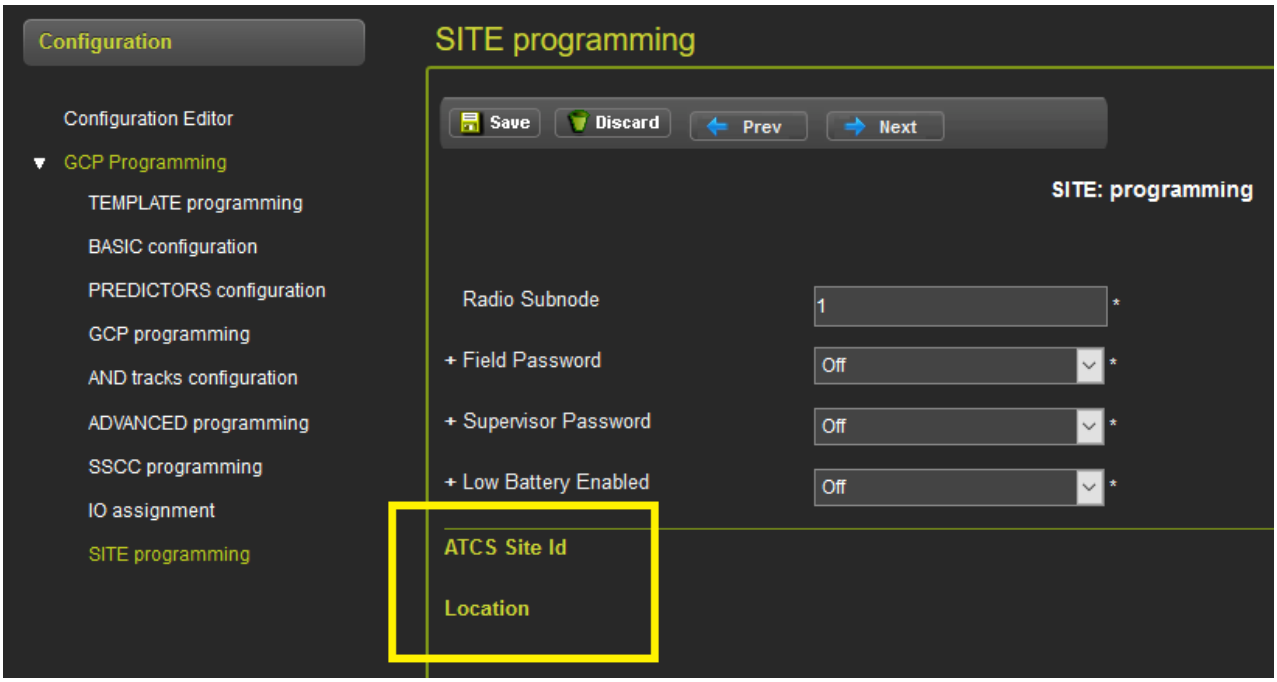


Figure 4-96 GCP4000: Site Programming

To set the ATCS Address for the GCP, go to the SITE programming and select the ATCS Site ID menu item, enter the ATCS address in the format: 7.RRR.LLL.GGG.SS

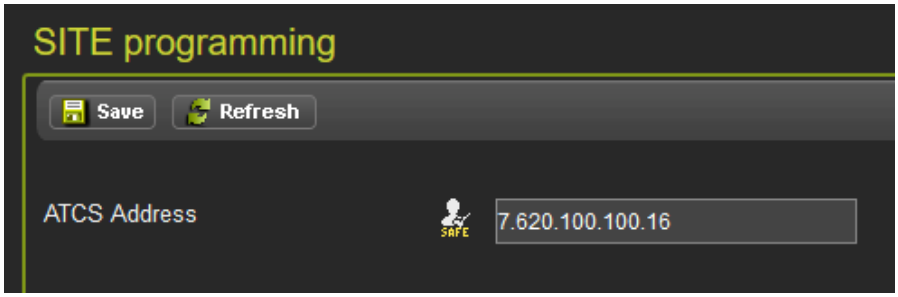


Figure 4-97 GCP4000: ATCS Address

To set the location information, go to the SITE programming and select the Location menu and enter the Site Name, DOT Number and Milepost. The Site Name defaults to the name of the site chosen when the site was created (see Figure 4-87).

Figure 4-98 GCP4000: Location Information

4.5.1.2 GCP5000 Sites

4.5.1.2.1 Site Configuration

The Site Name will default to the name chosen for the site as shown in Figure 4-86. Change this if necessary. Set the DOT if applicable, this will be used in the default name for the Configuration (PAC) files. If Vital ATCS communications will be used between GCP systems or the SEAR2i uses ATCS communications to external equipment, then set the appropriate ATCS address 7.RRR.LLL.GGG.SS where:

- The RRR is set using the ATCS Railroad parameter
- The LLL is set using the ATCS Line parameter
- The GGG is set using the ATCS Group parameter
- The SS is set using the ATCS CPU II+ Subnode parameter
- In the GCP5000 the SEAR2i and CPU will obtain their ATCS information from this one place, unlike the GCP4000 where the ATCS addresses have to be set independently of each other.

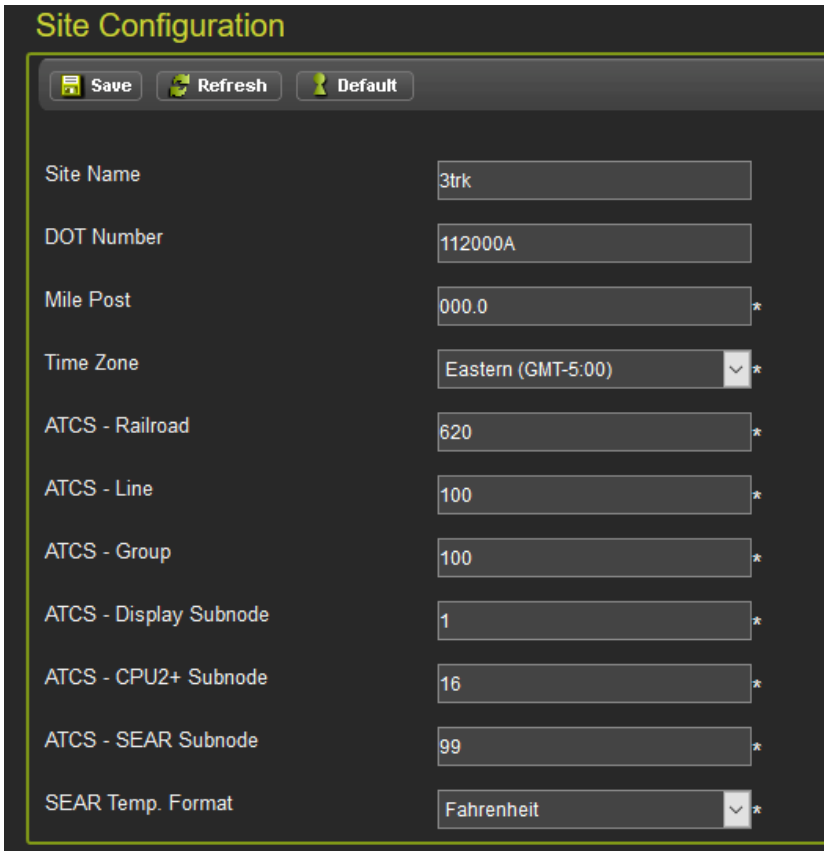


Figure 4-99 GCP5000 Site Configuration

4.5.1.2.2 GCP Programming

The first step in the GCP programming will be to set the Template from the Setup Wizard. Go to the GCP Programming / Setup Wizard and select the appropriate template that best fits the geometry of the crossing being designed.

NOTE

Each GCP MCF template has a specific set of default values and menus associated with it. When the template is changed, the GCP programming parameters are set back to the default values for this template so this value must be set before any other GCP Programming parameters can be changed to avoid loss of inputted data.

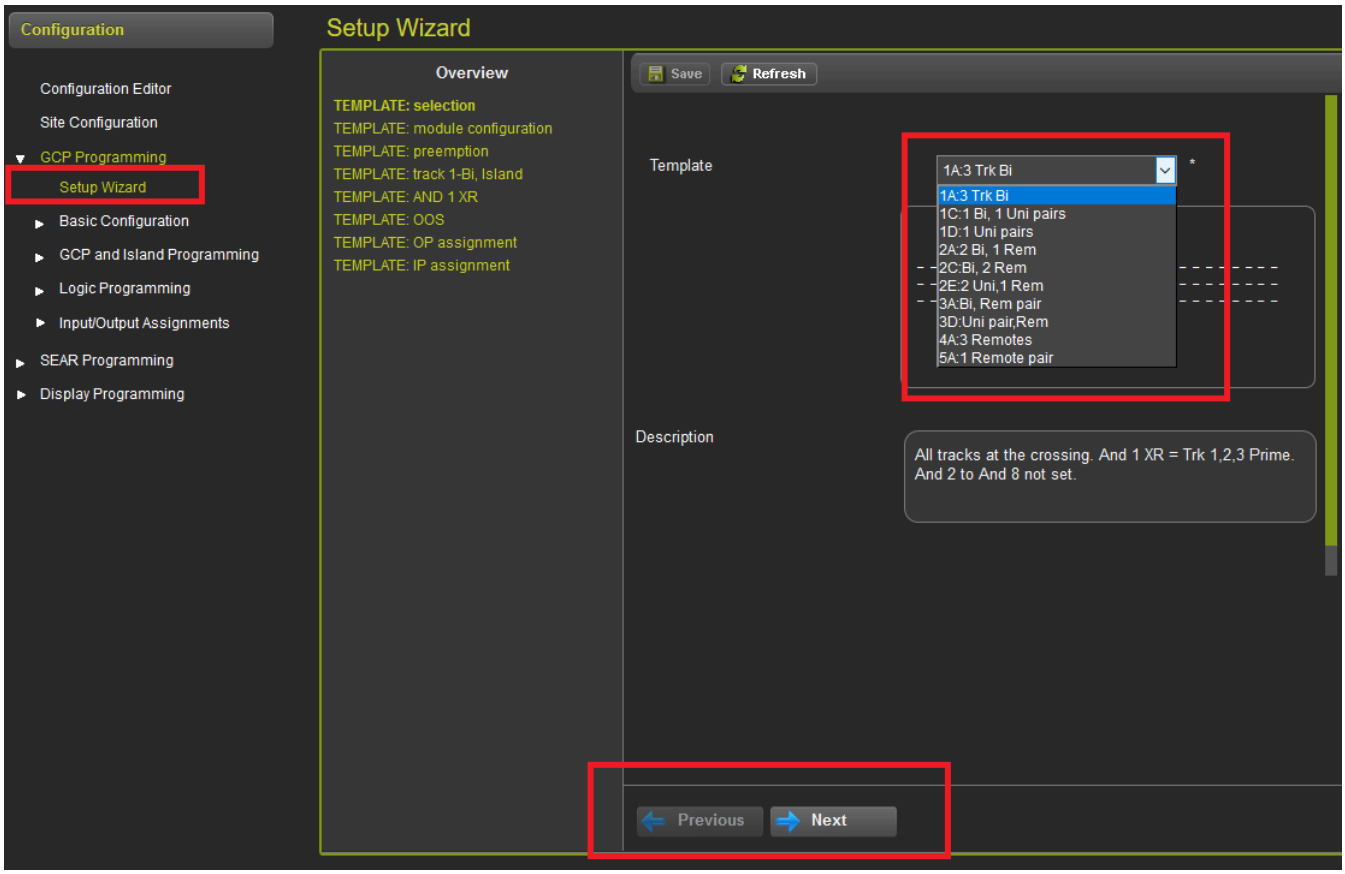


Figure 4-100 GCP MCF Template Selection

At this point the user can choose to go through each of the TEMPLATE menus in the Setup Wizard as a way to set the parameters that are most likely to require setup for the crossing, e.g. frequencies, and warning times. Use the **Next** and **Previous** buttons at the bottom of the template screens to move through each Template screen in a cyclic manner.

To change parameters that are not included in the template menus, select the appropriate menus from the left menus.

The asterisk (*) to the right of an item indicates that the parameter is set to its default value.

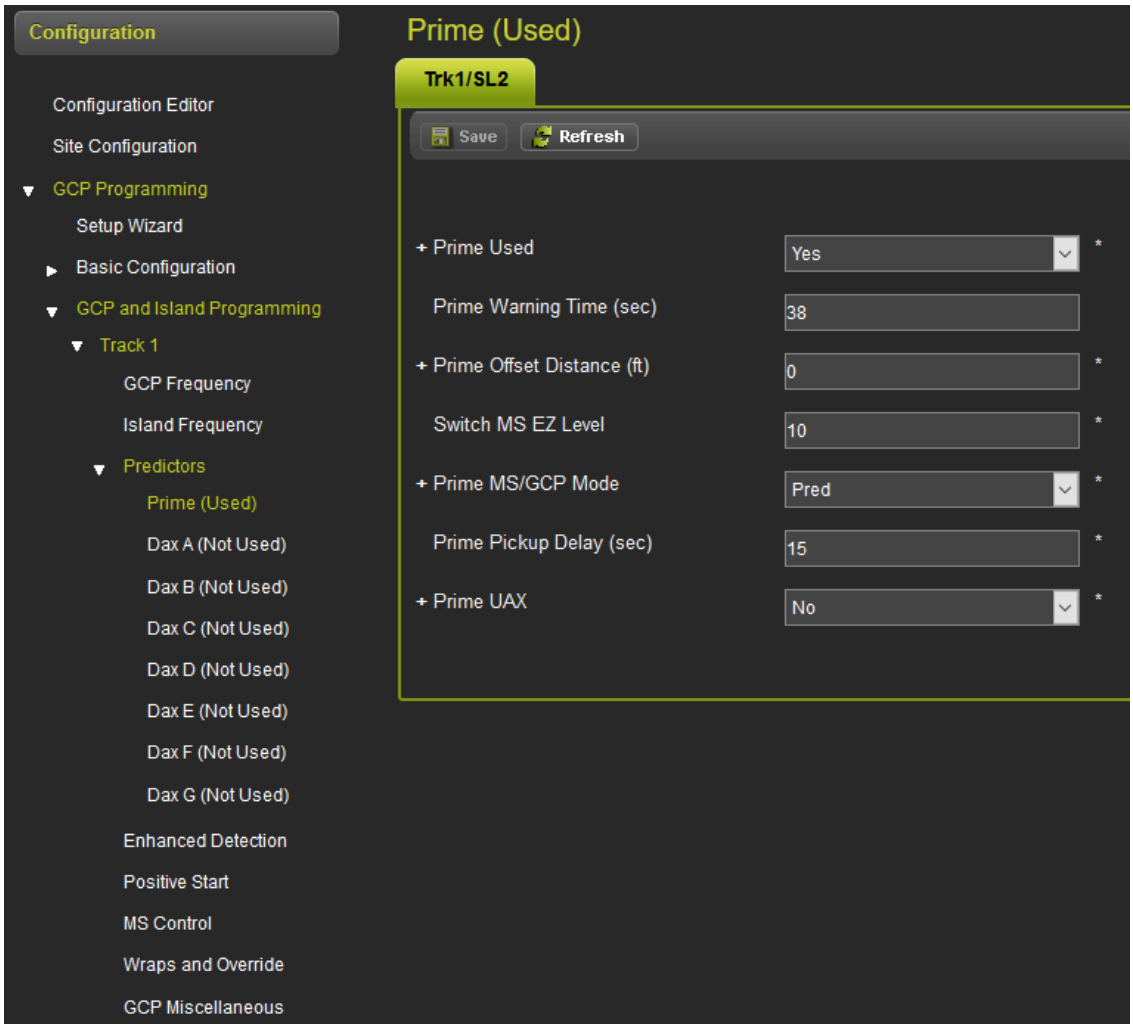


Figure 4-101 GCP Programming Menus

The plus sign to the left of an item indicates that changing this parameter will cause other parameters to be shown or hidden, for example: if Prime UAX is set to **Yes** and the change saved, the new parameter for the Prime UAX Pickup will be shown as seen in the figure below.

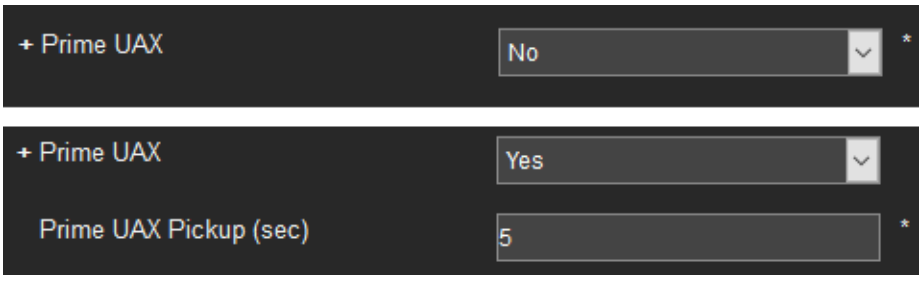


Figure 4-102 GCP Programming Hidden Parameters

NOTE

A hidden parameter will not be seen until the value of the parameter which causes it to be hidden is saved.

If a parameter value is shown with a red box with an exclamation (!) mark, this indicates that this setting is not valid. The generally occurs because another parameter has been changed which makes this choice invalid, for example, in the case below, the T1 Prime UAX was first enabled, then it was assigned to an input. Then the T1 Prime UAX was disabled, making the Input assignment invalid. If the user comes across these they should correct the configuration so that there are no invalid assignments.

Figure 4-103 Invalid Setting

4.5.1.2.3 SEAR Programming

As part of the SEAR programming, the user can select a CDL file, and setup the CDL questions, see section 5.1 for details.

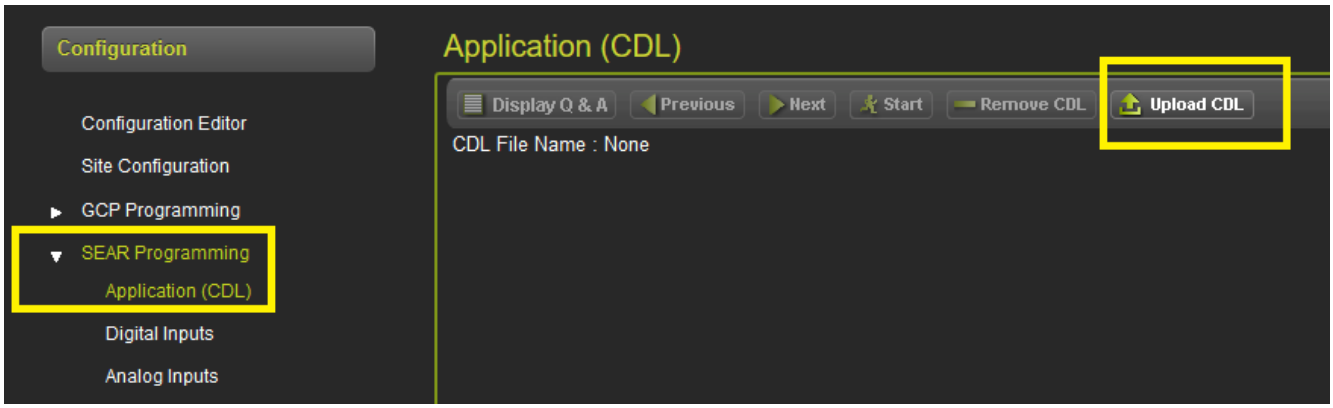


Figure 4-104 SEAR CDL Selection

On the GCP5000, the OCE allows the user to set the values for digital inputs on the SEAR.

The SEAR2i has 63 digital inputs, two of these are accessible on the front of the SEAR2i. The remaining 61 are connected to traces on the back plane of the chassis that allow the SEAR2i to monitor the GCP I/O with requiring any external wiring.

The Channels column indicates the name on the GCP chassis terminals. The names shown in the Channels column will depend on what type of module is defined in the module configuration.

If a track module is defined, the OCE will show the channel names relating to what is seen on the Mylar for each I/O point on the chassis, for example: OUT 1.1, TRK 2 RCV. If the slot is empty, the channels are labeled as spares (SP_x_y), where x indicates the slot number and y indicates the I/O point starting from the top connector and working down.

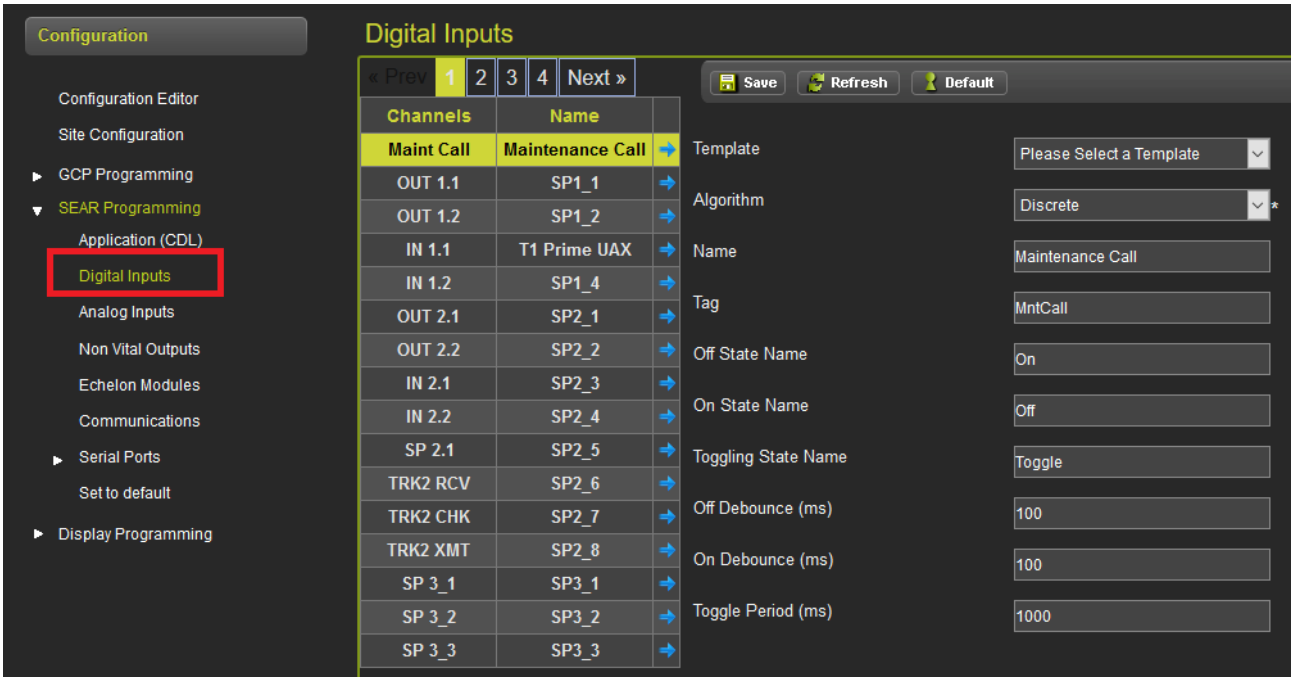


Figure 4-105 SEAR Digital Inputs

The Name column indicates the function the digital input is being used for. If the GCP programming has already assigned an input or output function for this channel, the OCE will show this channel as pre-assigned and show the function assigned in the GCP programming in the Name column, for example:

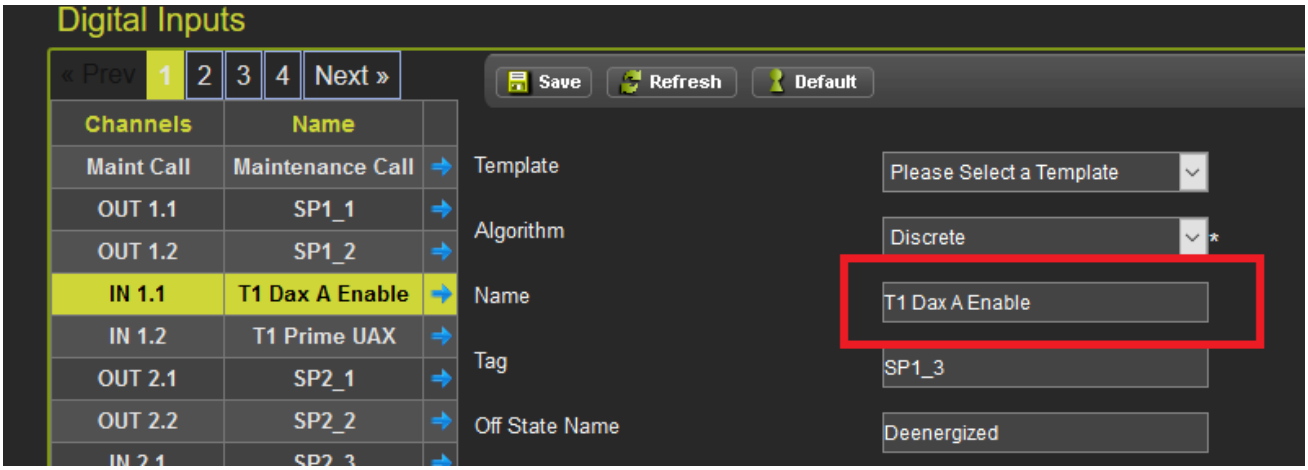


Figure 4-106 SEAR Digital Inputs

CAUTION

DO NOT CHANGE THE TEMPLATE FOR DIGITAL INPUTS THAT ARE ASSIGNED BY THE GCP PROGRAMMING.

Spare inputs can be used to monitor outputs from other sources that can be wired into unused GCP I/O connectors. Use the Template parameter to choose one of the predefined input types.

4.5.1.2.4 Display Programming

The Display programming menu has many options, but most will rarely be changed in the OCE.

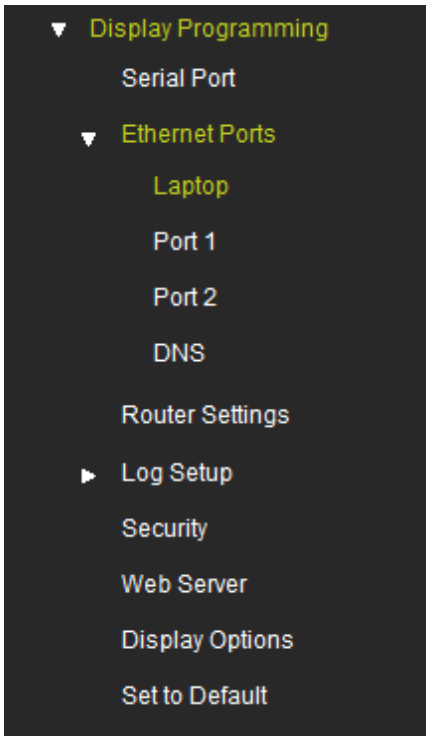


Figure 4-107 Display Programming

The most common parameters changed in the OCE are:

- Laptop Ethernet Port DHCP Configuration, used to select whether the display is a DHCP server or client
- Security Maintainer or Supervisor Password, used to enable or disable password protection

4.5.1.3 GCP3000+ Sites

4.5.1.3.1 Site Configuration

The Site Name will default to the name chosen for the site as shown in Figure 4-108. Change this if necessary. Set the DOT if applicable, this will be used in the default name for the Configuration (PAC) files. If an event recorder is used, such as the Argus, set the appropriate ATCS address that will be used to communicate to the Argus: 7.RRR.LLL.GGG.SS where:

- The RRR is set using the ATCS Railroad parameter
- The LLL is set using the ATCS Line parameter
- The GGG is set using the ATCS Group parameter
- The SS is set using the ATCS CPUII+ Subnode parameter
- The ATCS – SEAR Subnode is used to set the ATCS Subnode that the external event recorder is on.

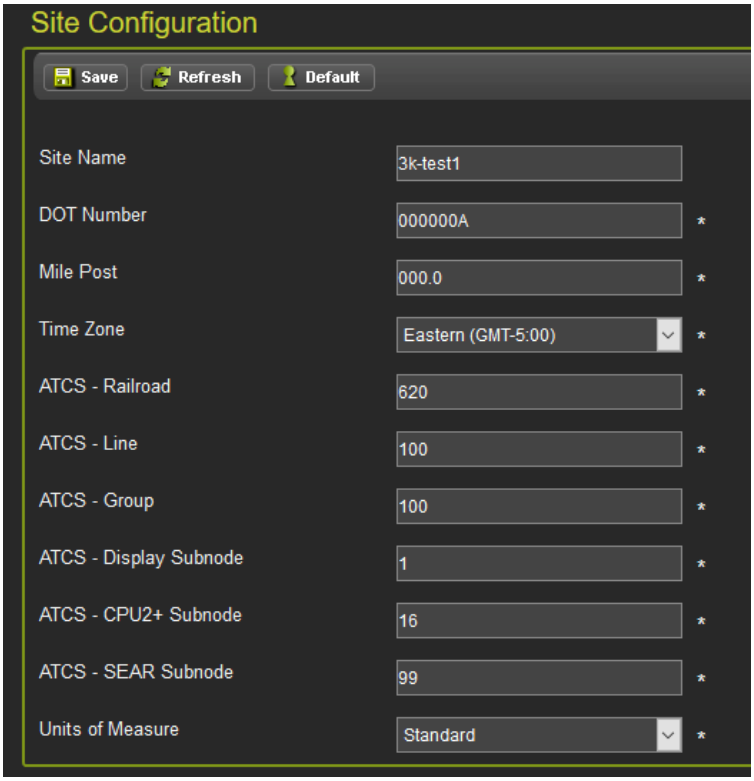


Figure 4-108 GCP3000+ Site Configuration

4.5.1.3.2 GCP Programming

All the GCP 3000+ Programming is done under the GCP Programming menu. Start at the **General Configuration** page and go through each menu in turn, setting the required values.

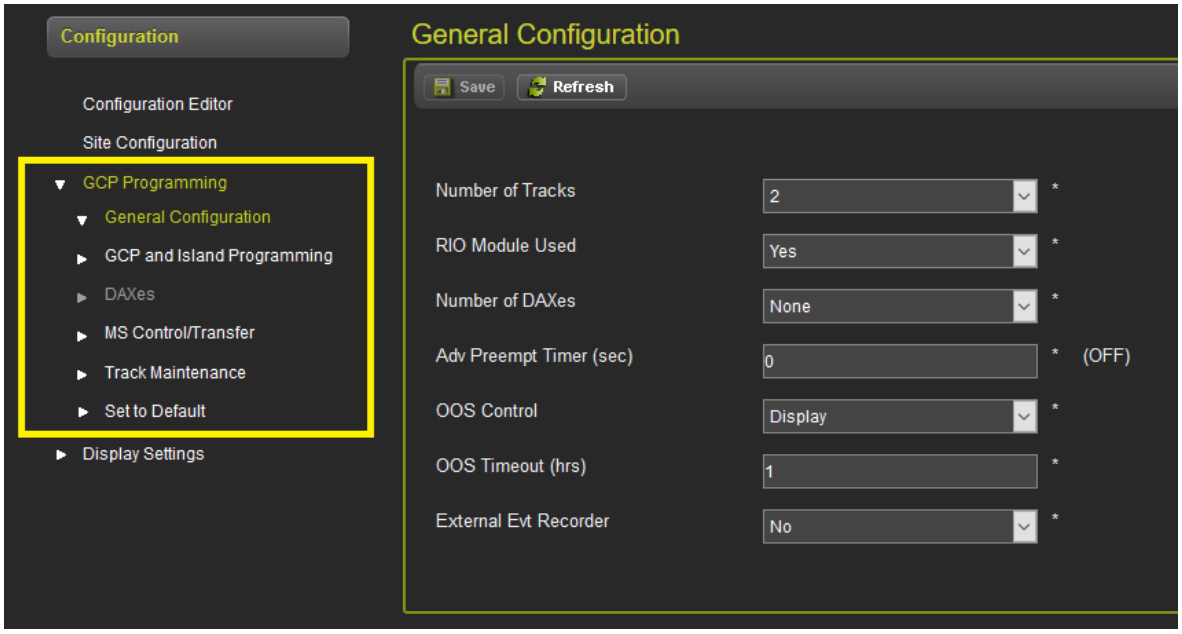


Figure 4-109 GCP3000+ Programming

4.5.1.3.3 Display Settings

Use the Display Settings menu to:

- Check the default, uneditable IP address (see Figure 4-110)
- Enable the maintainer password
- Set the Session Inactivity Timeout
- Set the Display Settings back to default

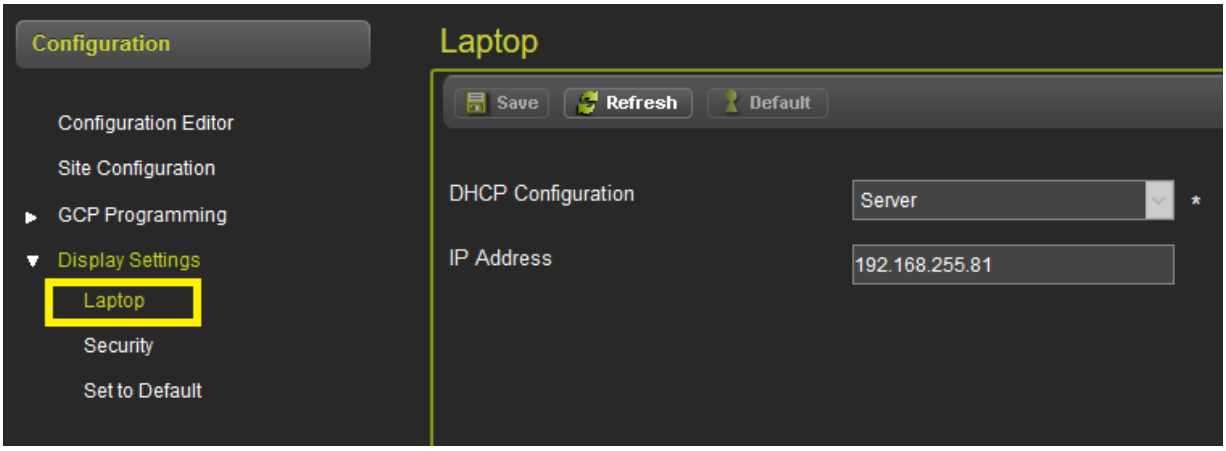


Figure 4-110 GCP3000+ Display Settings: Laptop

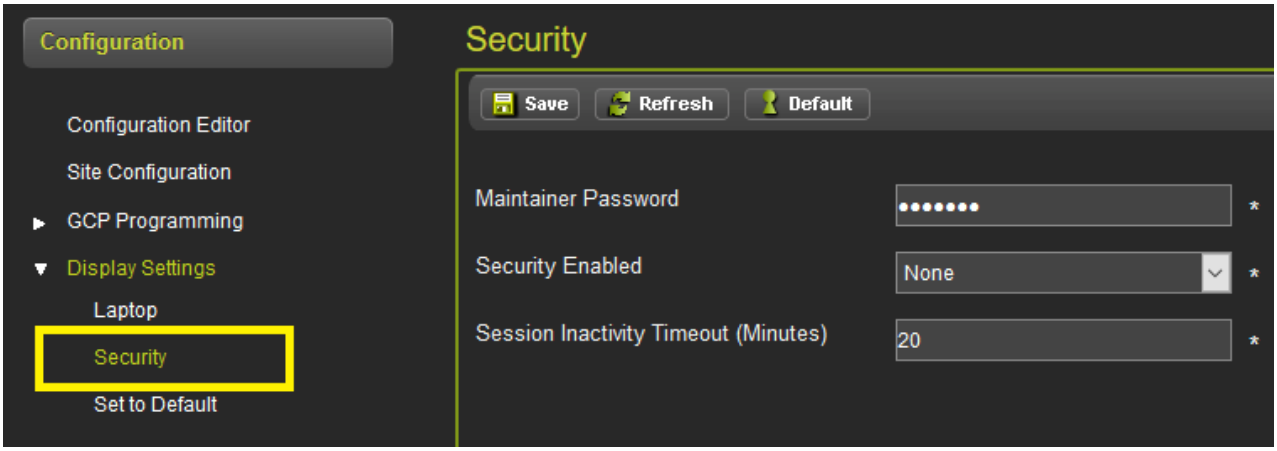


Figure 4-111 GCP3000+ Display Settings: Security

4.5.1.4 Build Configuration Files

When all the parameters have been set, return to the Configuration Editor menu and select the **Build Config Files** button.

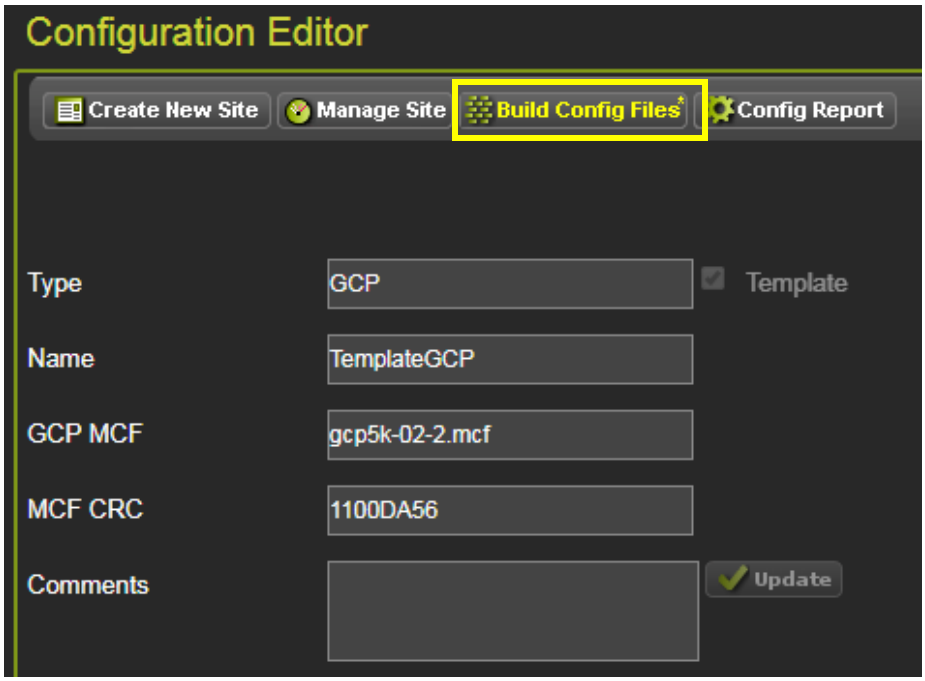


Figure 4-112 Build Config Files

The OCE will give a warning message that it will set hidden parameter values back to default. This is done so that when the configuration is set in the field, the OCCN from the field will match the one from the office. If a parameter is changed from its default value and then gets hidden by another menu item, it is very difficult for field personnel to determine why the OCCNs do not match. Select **OK** to proceed.

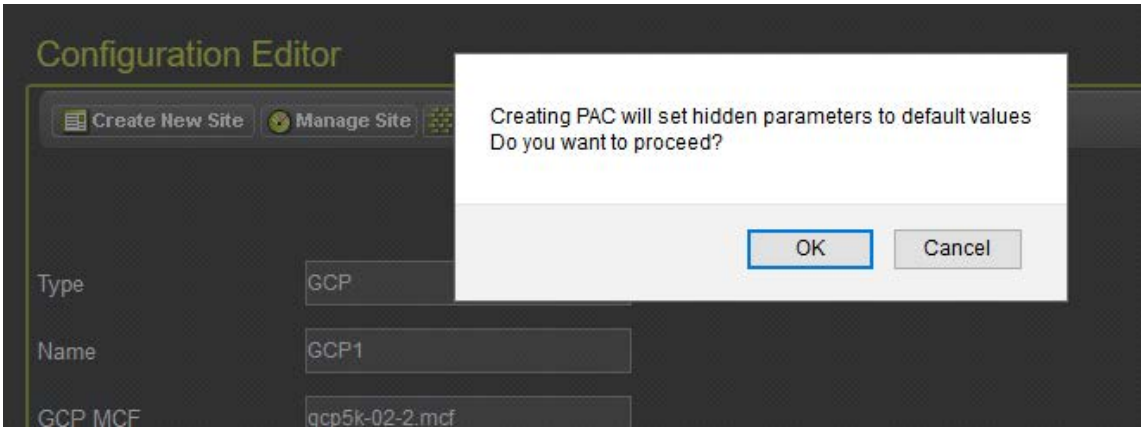


Figure 4-113 Hidden Parameter Default Warning

After selecting **OK**, the OCE will prompt the user to enter a name for the PAC file. The default naming convention is:

CONFIG–{DOT Number}–{Date}.PAC

Where the {DOT number} is the value of the DOT number entered in the Site Configuration menu. Since the user may want to adapt a different convention, or the railroad does not use DOT number (e.g. in Canada), the user gets the option to enter their own name at this point.

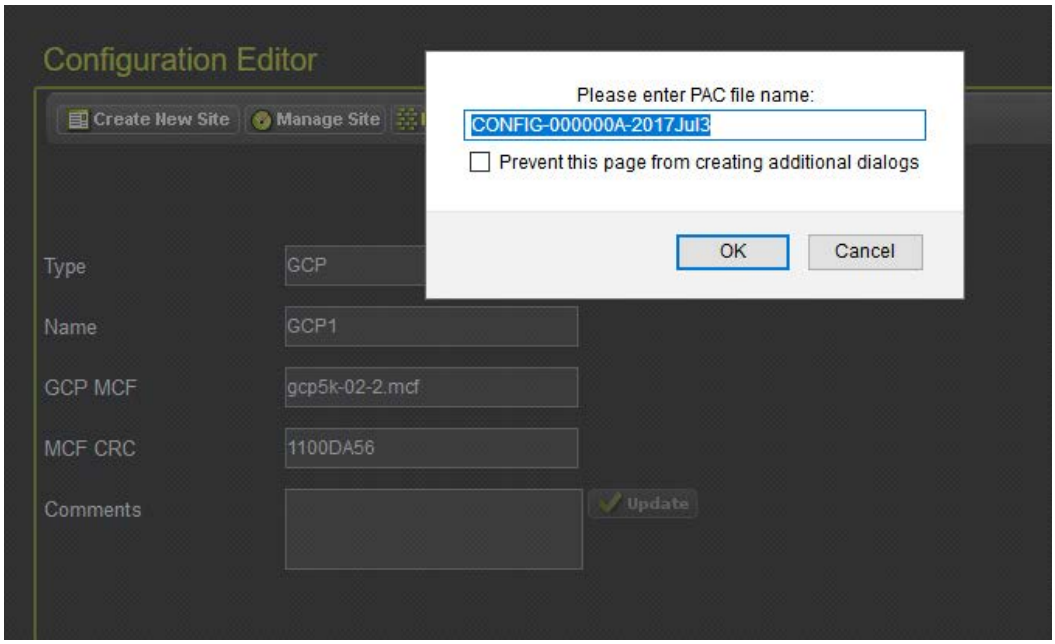


Figure 4-114 Naming the PAC file

After selecting **OK** the OCE will process the files for a few seconds then pop up a dialogue box indicating the build was created successfully.

For GCP locations, the output files created by the build process are put at the location set in the Maintenance / GCP Build Settings / Output Build Path (see section 3.2.2); this location defaults to c:\siemens\oce\workspace.

The OCE will create a folder named after the location name under the output build path. In this folder the OCE will put the PAC file, the ZIP file and a subfolder containing the reports.

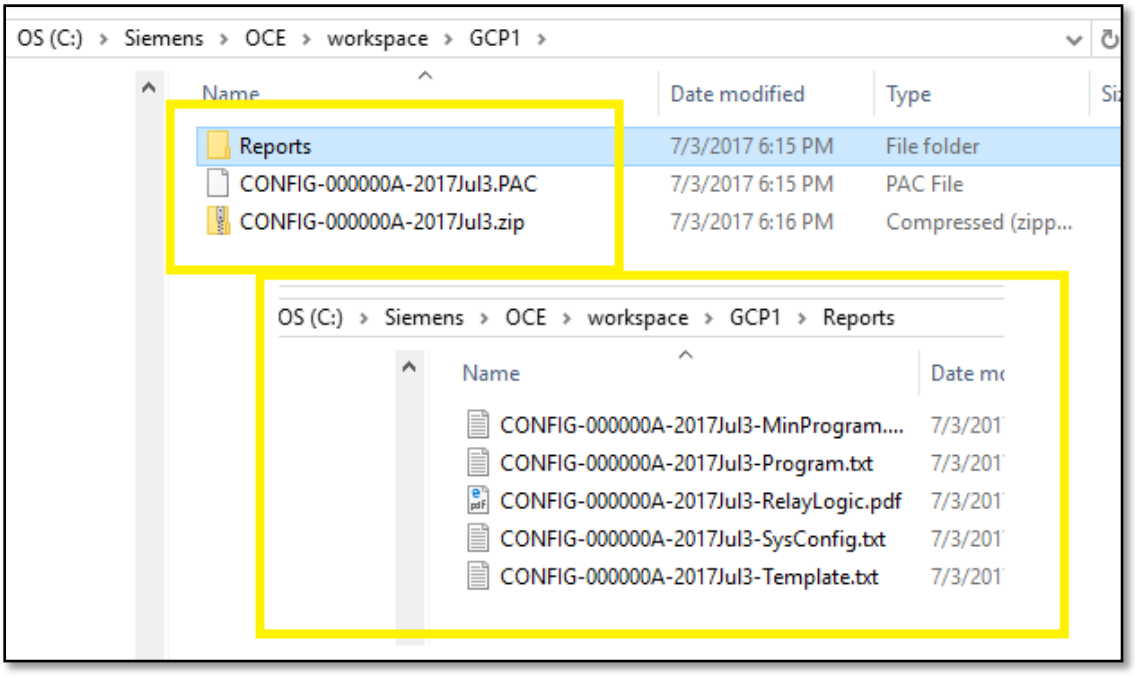


Figure 4-115 GCP Build Outputs

The ZIP file can be loaded onto a USB and used to program the GCP. It will contain the MCF and the PAC file under the directory structure required by the GCP. The ZIP file will also contain the report files and relay logic diagram. The OCE allows the user to choose which report files to save in the ZIP file as different railroads want to keep different reports, this is also set on the Maintenance / GCP Build Settings page, see section 6.1.3.

4.5.2 Creating a Site from A PAC File / Modifying Existing PAC File

The OCE provides two ways of opening an existing PAC (or ZIP) file.

a) The PAC or ZIP file can be imported; this is the most convenient method if the PAC file is just going to be looked at and not modified, or if it is going to be modified with no change to the MCF.

b) A new GCP site can be created and an existing PAC file used to populate the data. This method is more useful if the PAC file is going to be upgraded to a new MCF. The disadvantage of this method, if the MCF is not going to be changed, is that the reports are not available to be looked at without recompiling.

4.5.2.1 Importing a PAC/ZIP File

To open an existing PAC file or ZIP file, select the Manage Site / Import:

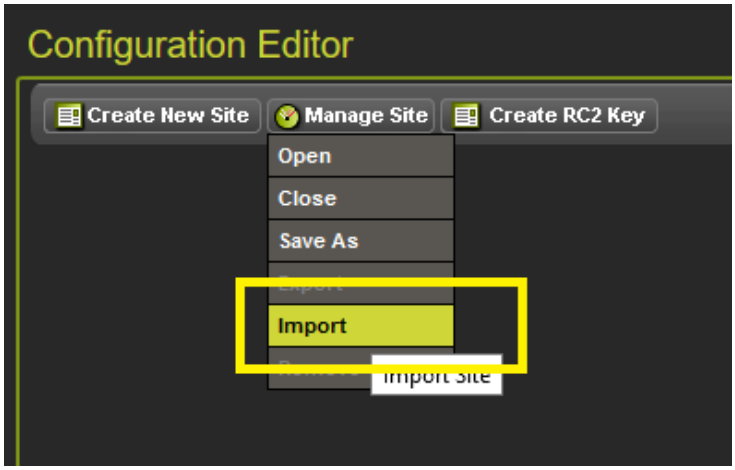


Figure 4-116 Import PAC File

Then, next to the Import file, click **Browse** and select either the PAC or the ZIP file to be opened. The OCE will fill in the Site Name with the name of the PAC file. The user can change site name here as required, then select **OK**.

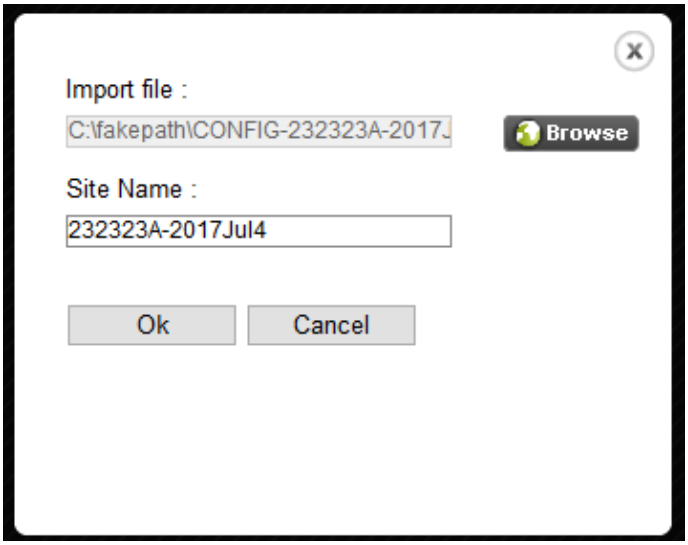


Figure 4-117 Select PAC or ZIP to Import

The OCE will return to the Configuration Editor and show the site has been opened. To look at the configuration reports, select the **Config Report** button.

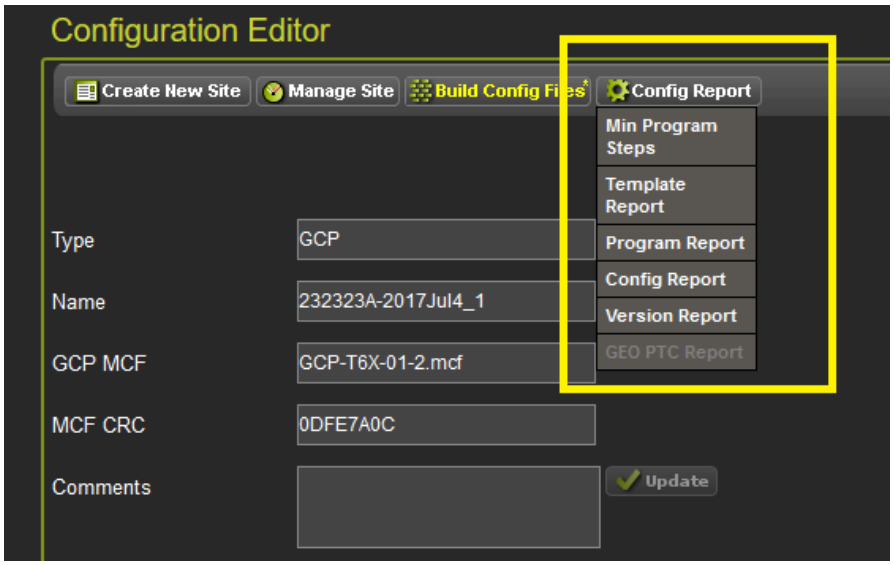


Figure 4-118 Show Report

From this point the user can modify the configuration if they wish, and rebuild it by pressing the **Build Config Files** and create a new PAC / ZIP file.

4.5.2.2 Creating New Site from PAC file / Upgrading PAC to Different MCF

The second method of opening a PAC file it to first create a new site and open the PAC file. This method is better suited to upgrading a PAC file from an old MCF to a new one, because the reports are not available to view without first rebuilding the configuration.

1. Select GCP on the **Create New Site** drop menu shown in Figure 4-119.

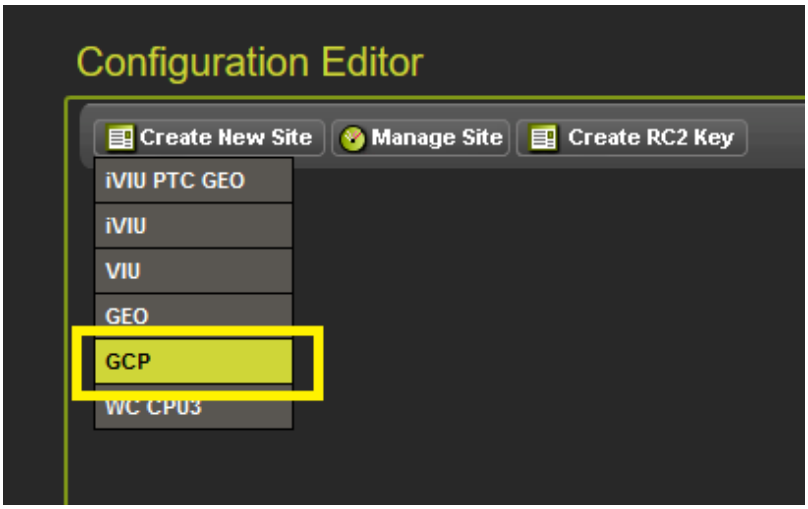


Figure 4-119 Creating a GCP Site

2. Enter a name for the site.

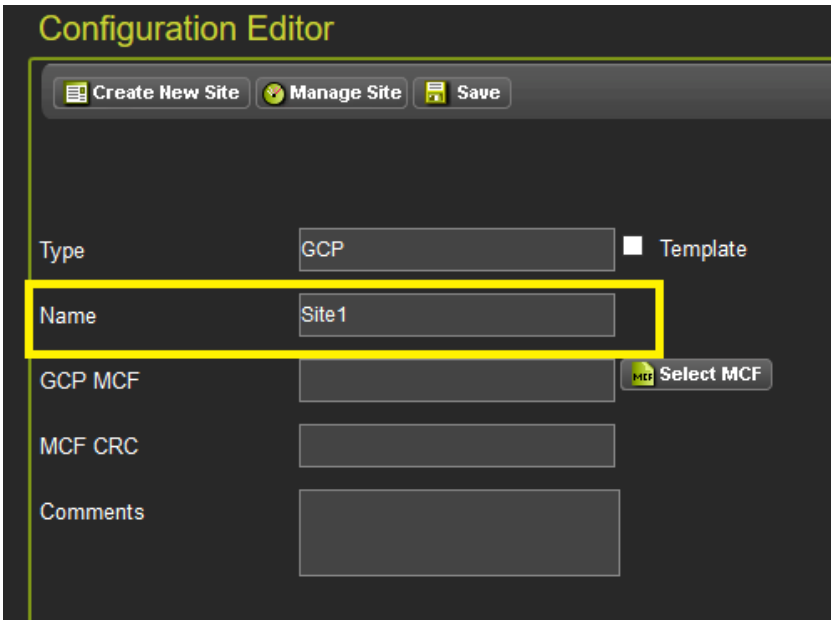


Figure 4-120 GCP Editor Window

3. Press the **Select MCF** option shown in the figure above and then select the option to **Create New Site from PAC File**.

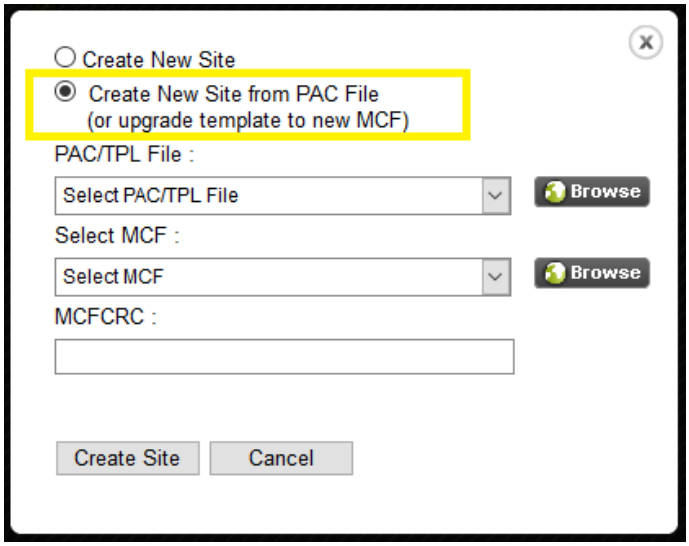


Figure 4-121 Create GCP Site Window

4. Select the **Browse** button next to the PAC/TPL File field and then navigate to the location where you have your PAC file and select it.

NOTE

If the drop-down arrow next to Select PAC/TPL File is selected, the drop-down list will show all the PAC files that exist in sites that have already being created under C:\Program Files (x86)\Common Files\SAFETRAN\WebUI\Oce_configuration\admin.

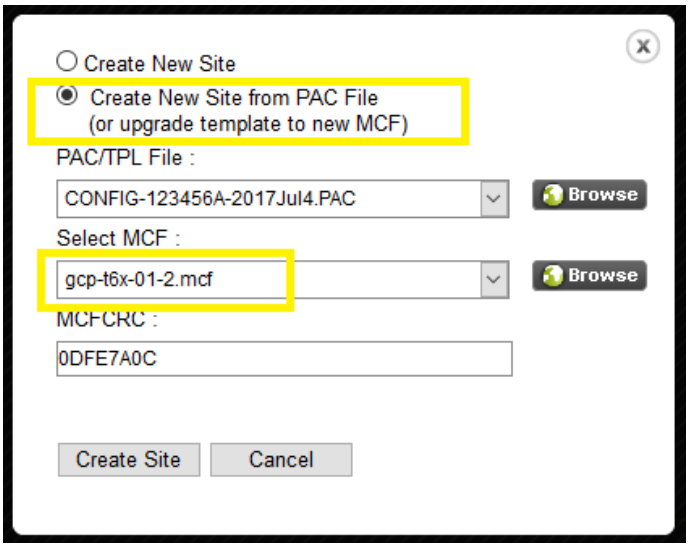


Figure 4-122 PAC File Selection

5. Once the PAC file has been selected, the OCE will automatically fill in the MCF and MCF CRC information from that used to create the PAC file.
6. In order to upgrade to a new MCF, select the new MCF using the down arrow under **Select MCF**.

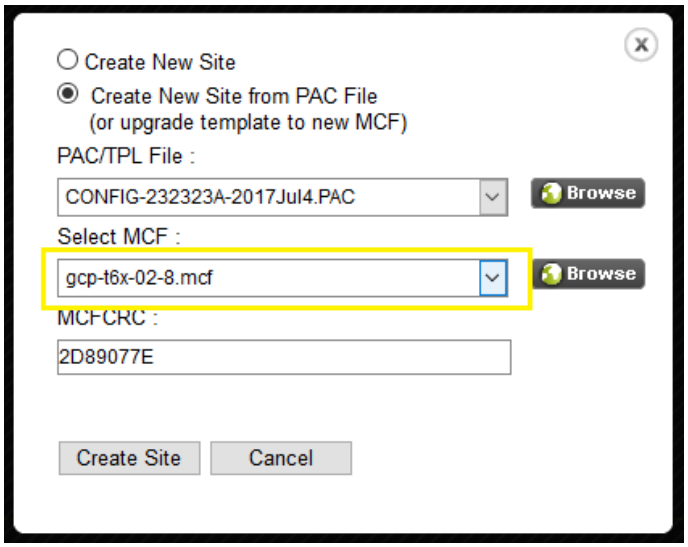


Figure 4-123 Change MCF

7. Once the correct MCF has been selected, click the **Create Site** button (shown in Figure 4-123) and the OCE will create the site with the newly selected MCF, but based upon the configuration settings in the original PAC file.

The OCE will create an import report and store it under the name of the site in:

C:\Program Files (x86)\Common Files\Siemens\WebUI\Oce_configuration\admin\.

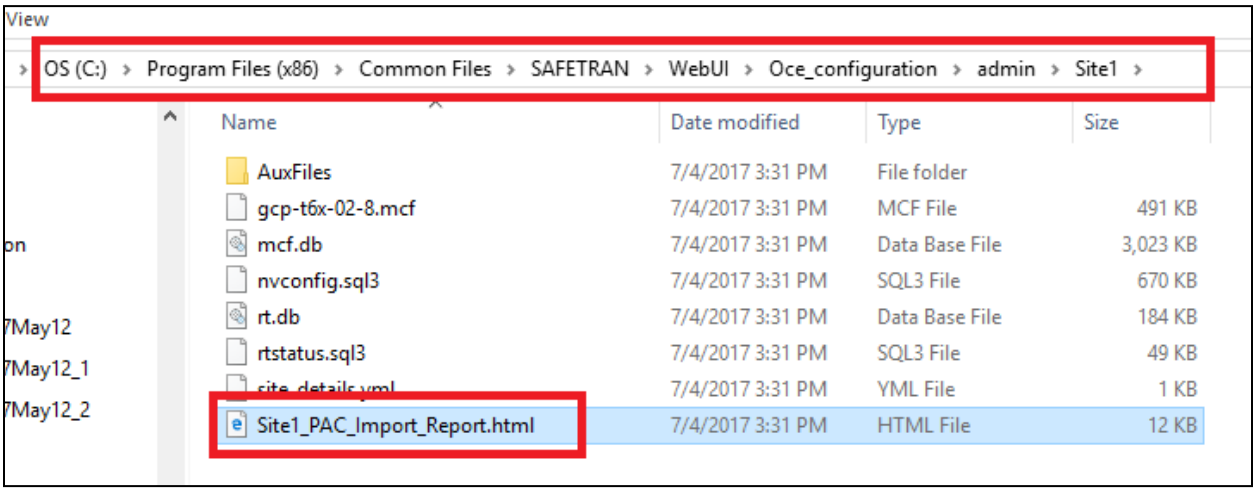


Figure 4-124 Import Report Location

The import report will contain details of what happened during the conversion of the PAC file from the old MCF to new one. It will detail exactly which parameters changed and which did not; for instance, the new MCF may have new parameters that were not present in the old MCF. Some parameters may be renamed, or values not found, so the import report and new configuration needs to be checked in detail to ensure the new configuration is correct.

For example, in the conversion from the old MCF (GCP-T6X-01-2.MCF) to a much later MCF (GCP-T6X-02-8.mcf) the parameter “Poor Shunting Level,” which had a numerical value, has been changed to “Inbound PS Sensitivity” which has an enumerated value; this example information is shown in the report.

PAC File Import

Current Configuration	Imported PAC File
MCF Name: GCP-T6X-02-8.mcf MCFCRC: 2D89077E MCF Revision: 028	PAC File Name: CONFIG-123456A-2017Jul4.PAC MCF Name: GCP-T6X-01-2.mcf MCFCRC: DFE7A0C MCF Revision: 012
Warnings	**Description**
MS4000 Advanced	
Track 1 : Inbound PS Sensitivity = Max	Updated from PAC File. (Old Name: Poor Shunting Level, Old Value: 2)
GCP: track 1	
Track 1 : Island Distance = 199 ft	Updated from PAC File.
GCP: track 1 enhanced det	
Track 1 : Trailing Switch Logic = Off	Updated from PAC File.
Track 1 : Outbound PS Timer = 10 sec	Updated from PAC File. (Old Name: Station Stop Timer)
GCP: track 2	
Track 2 : Island Distance = 199 ft	Updated from PAC File.
GCP: track 2 enhanced det	
Track 2 : Trailing Switch Logic = Off	Updated from PAC File.
Track 2 : Inbound PS Sensitivity = Max	Updated from PAC File. (Old Name: Poor Shunting Level, Old Value: 2)
Track 2 : Outbound PS Timer = 10 sec	Updated from PAC File. (Old Name: Station Stop Timer)

Figure 4-125 Import Report

4.5.3 Creating Templates

The GCP MCFs are generic application files for GCP4000, GCP5000 GCP3000+, or SGCP4000/MS4000s. The MCF contains default values for all configuration parameters. Different railroads may have different default values they wish to use for some of these parameters. Rather than have the user set these for every GCP location created with the OCE, the OCE allows the user to create templates where these values are preset, then select to create the location based upon this.

For example, let's assume the railroad wants the following as defaults:

- Prime Warning time of 25 s (normal default is 35 s),
- Prime Pickup Warning time of 30 s (normal default is 15 s),
- Dax Warning Time of 30 s (normal default is 15 s),

NOTE

NOTE

At this point in the development of the OCE, the default values are specific to a particular MCF template (e.g. MTF-1A, MTF-2A etc.) so that when the user creates a template to be used by the OCE, as described in the steps below, the results are specific to a particular MCF template.

The user can create a template for a specific MCF containing the custom settings using the following procedure:

1. Create a new GCP site from the **Create New Site** menu.
2. Check the **Template** check box.
3. Chose a name that reflects the template. The result of creating the template is a template PAC file which is named later, so this name may not be required in future.

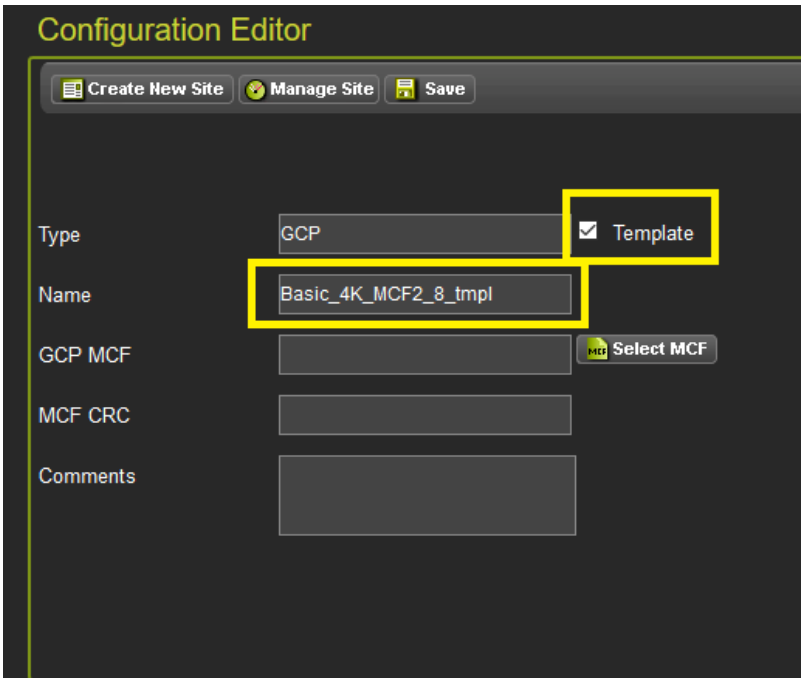


Figure 4-126 PAC File loaded

4. Select the **Create New Site** option and choose the MCF the template is based upon, then click **Create Site**.

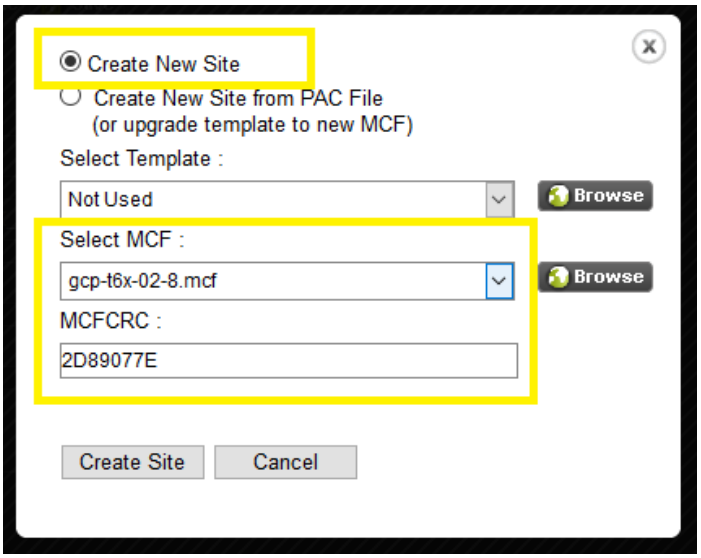


Figure 4-127 Selecting MCF for Template

5. The OCE will create the site and return to the Configuration Editor.
6. Select the GCP template from the TEMPLATE: selection screen. The new default values will apply as illustrated in the following figure.

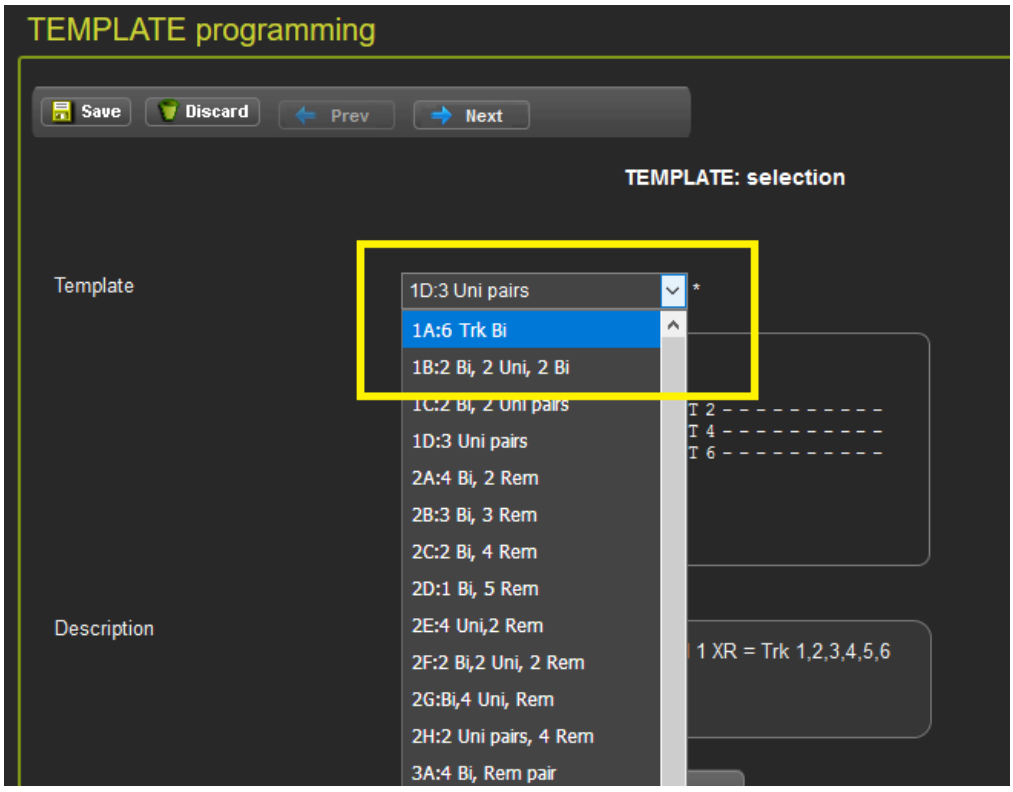


Figure 4-128 Enable all Tracks and Predictors

7. In the example shown in Figure 4-128, the user wanted to change the default Prime and Dax parameters. To do this, enable each Track from the Basic configuration screen and then set each **Dax Used** to **Yes** for each track.

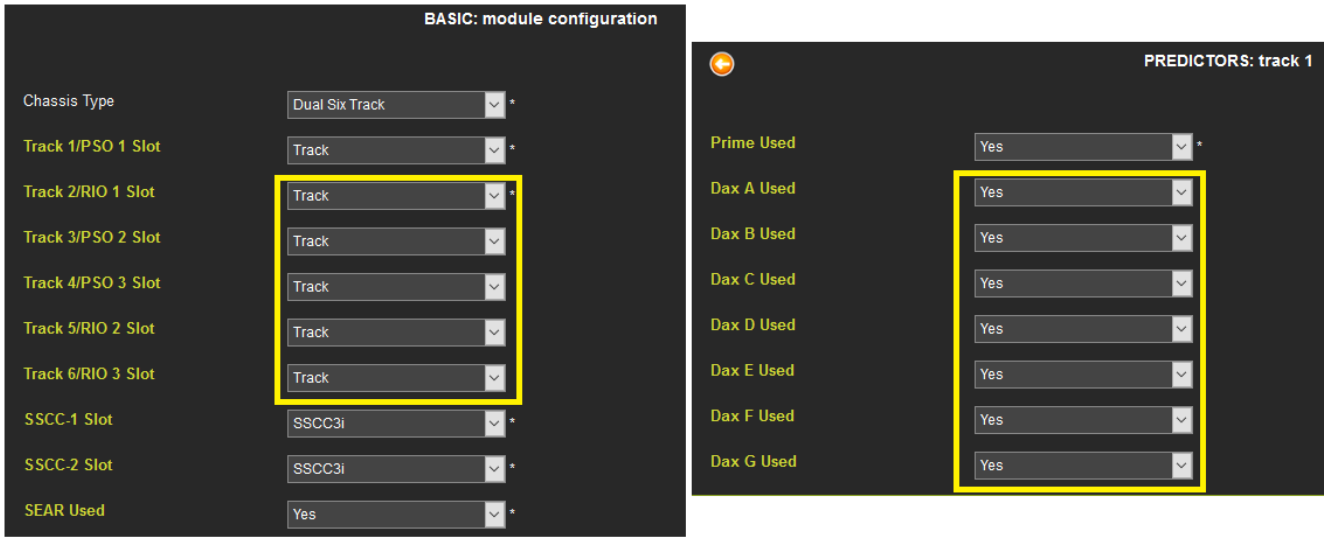


Figure 4-129 Enable all Tracks and Predictors

8. Then navigate to each parameter that requires a change to the default and set the new value.

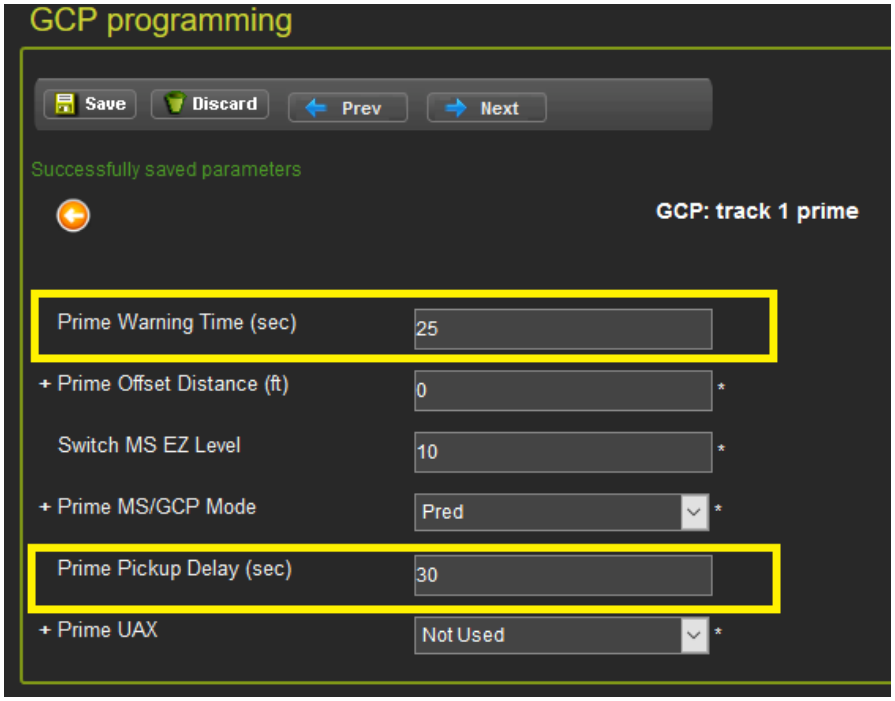
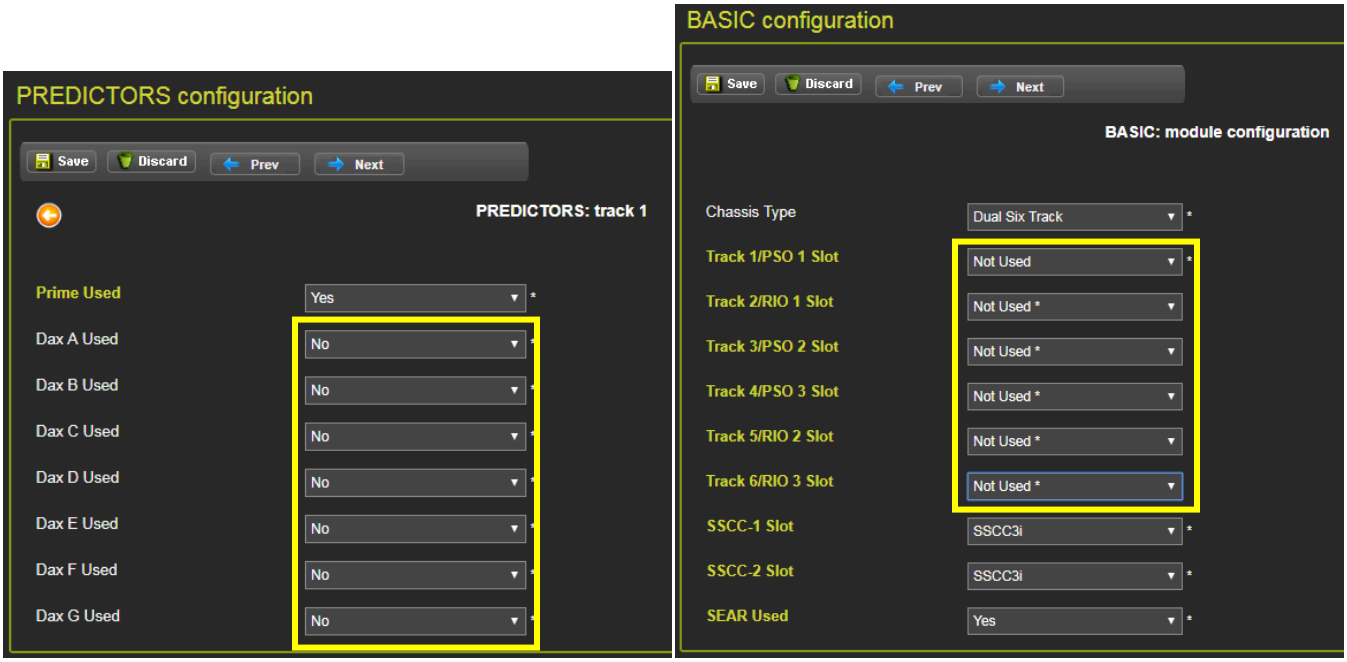


Figure 4-130 Changing Default Values for Template

9. Now go back and set each **Dax Used** to **No** as required and turn off the tracks that won't be typically required when using this template. The default values the user sets for these hidden Daxes and tracks will remain set.



10. After turning off unused tracks, go back to the Configuration Editor and select **Build Config Files**.

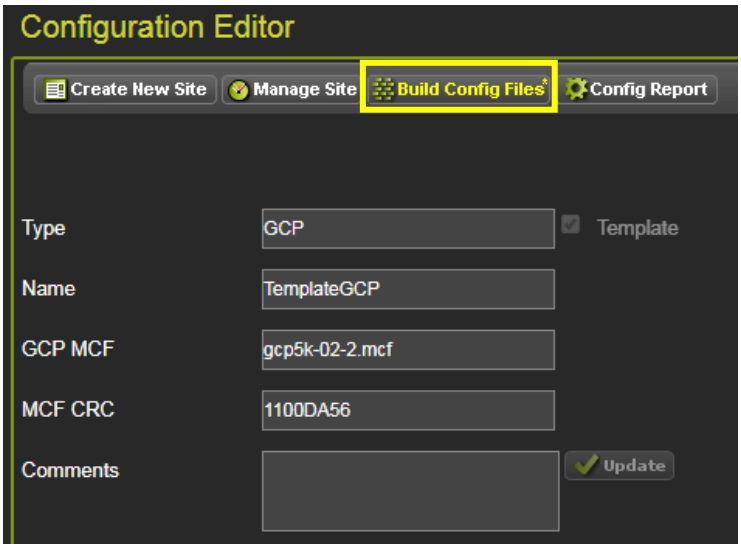


Figure 4-131 Build Config Files

11. The OCE will ask for the name of the template. It is recommended to choose a name that reflects which system (4K or 5K), which MCF (e.g. 02-8) and which MCF template is used (e.g. 1A), as different templates may be created for different MCFs and different MCF templates.

12. Then select **Create Template**. The OCE will pop up a message saying “Template updated successfully.”

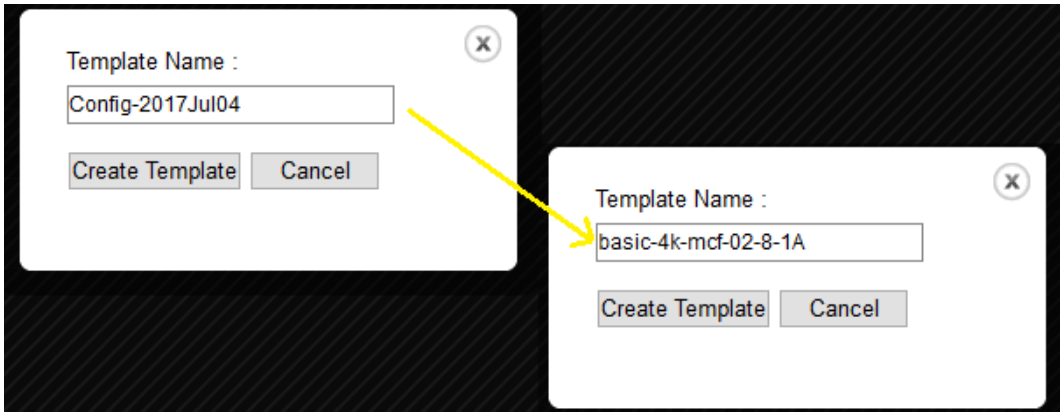


Figure 4-132 Set Template Name

The template files are stored in folders under:
C:\Program Files (x86)\Common Files\Siemens\WebUI\Oce_configuration\templates\gcp.

NOTE

NOTE

The folder path listed above is used by 32-bit Windows machines. When a 64-bit machine is used, the path will not include ‘(x86)’.

If there are templates that are no longer needed, delete the folder from the above directory. To delete all the templates, use the Maintenance / File Manager / Remove Template option (see 6.1.2.3).

4.5.4 Using a Template

To use a template, select **Create New Site** and select GCP. Enter the Name as shown in Figure 4-87; keep the Template check box unchecked. Then press **Select MCF**. Click the drop-down arrow next to Select Template to get a list of all the templates available.

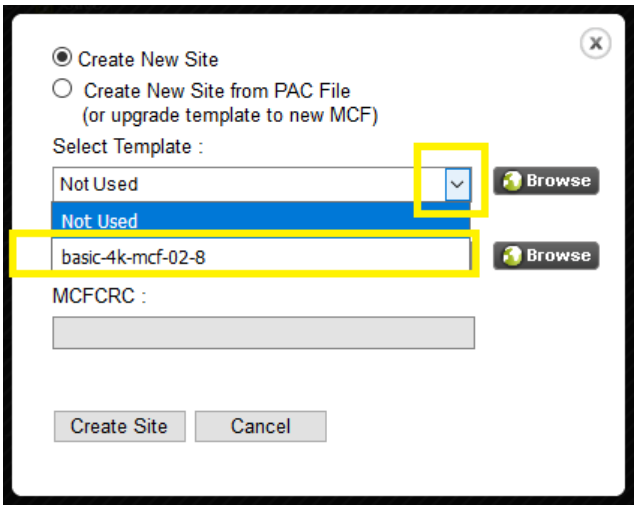


Figure 4-133 Select Template to Use

Select the template to be used and the OCE will automatically fill in the MCF information based upon that used in the template, then select **Create Site**. The customer-defined defaults in the template will be applied to the new site.

NOTE

NOTE

If the GCP MCF Template selected on the **TEMPLATE: selection** screen shown below (which is distinct from the OCE template the site is built on) is changed, the default values from the OCE template will be lost. This is because selecting a new GCP MCF Template in the **TEMPLATE: selection** screen will override the OCE Template's default values.

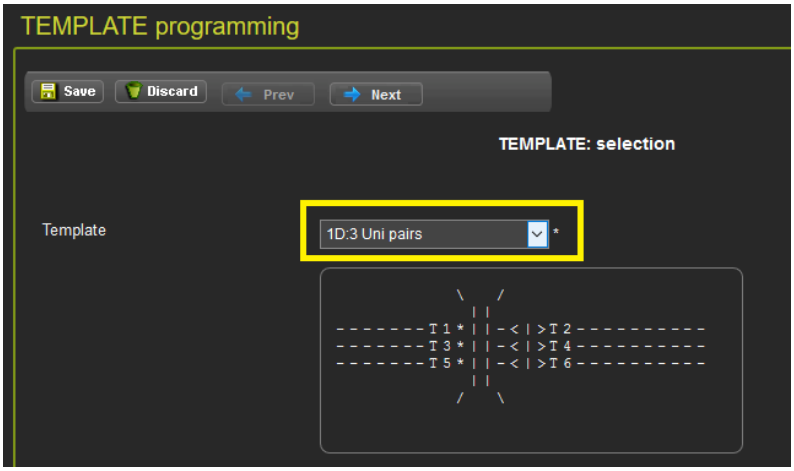


Figure 4-134 TEMPLATE: Selection Screen

To avoid problems for the GCP4000 and 5000, the user should create a corresponding OCE template for each GCP MCF Template, to ensure the site will match the default values used in the GCP MCF template.

4.5.5 Comparing PAC/ZIP files

It is useful to be able to compare PAC files to:

a) see changes from one version to a later version after modifications have been made

b) compare a PAC file downloaded from the field to the one created in the office

To compare PAC files select the **Tools** icon from the top level menu. This will bring up the Compare PAC files screen as shown below.

Figure 4-135 Compare PAC Files

Select the PAC files to be compared using the **Browse** buttons, then select the **Compare** button.

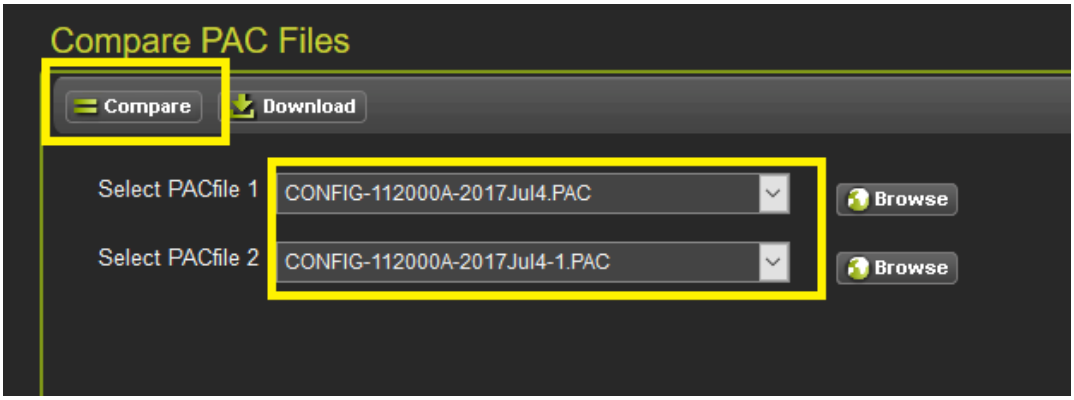


Figure 4-136 Compare two PAC Files

The OCE will compare the files. If the files are identical, the OCE will show the following:

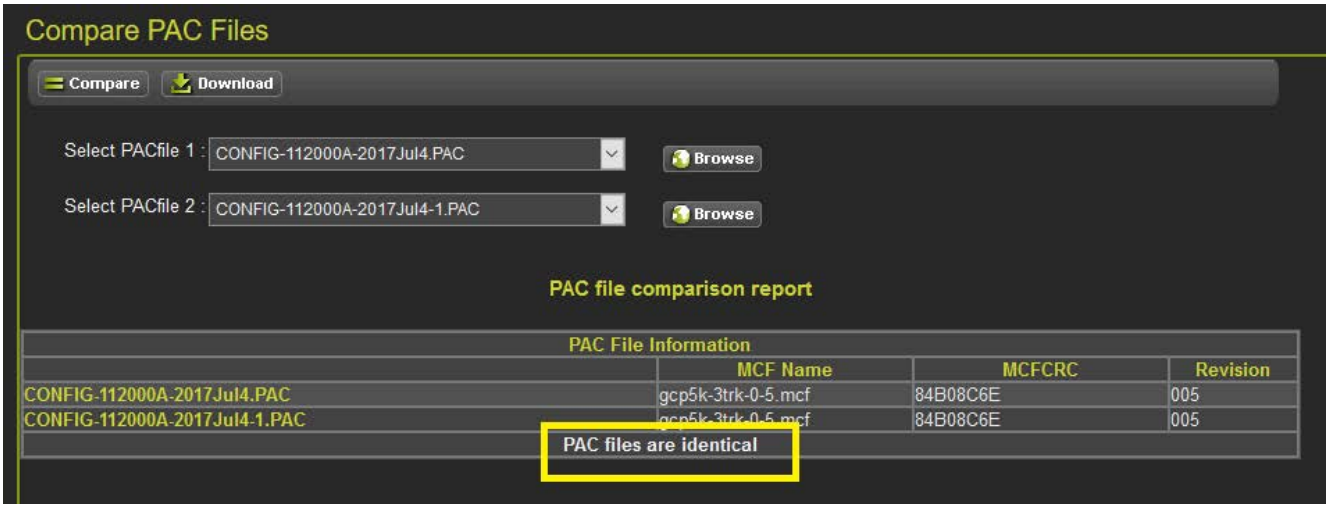


Figure 4-137 Comparison of two Identical PAC Files

If the PAC files are not identical, the OCE will show the differences in red, as illustrated in Figure 4-138. The comparison report shows two columns, one for each PAC file, the differences between the files are shown in these columns. Use the scroll bar on the right to scroll down. The OCE shows differences in the vital MCF and non-vital portions of the configuration.

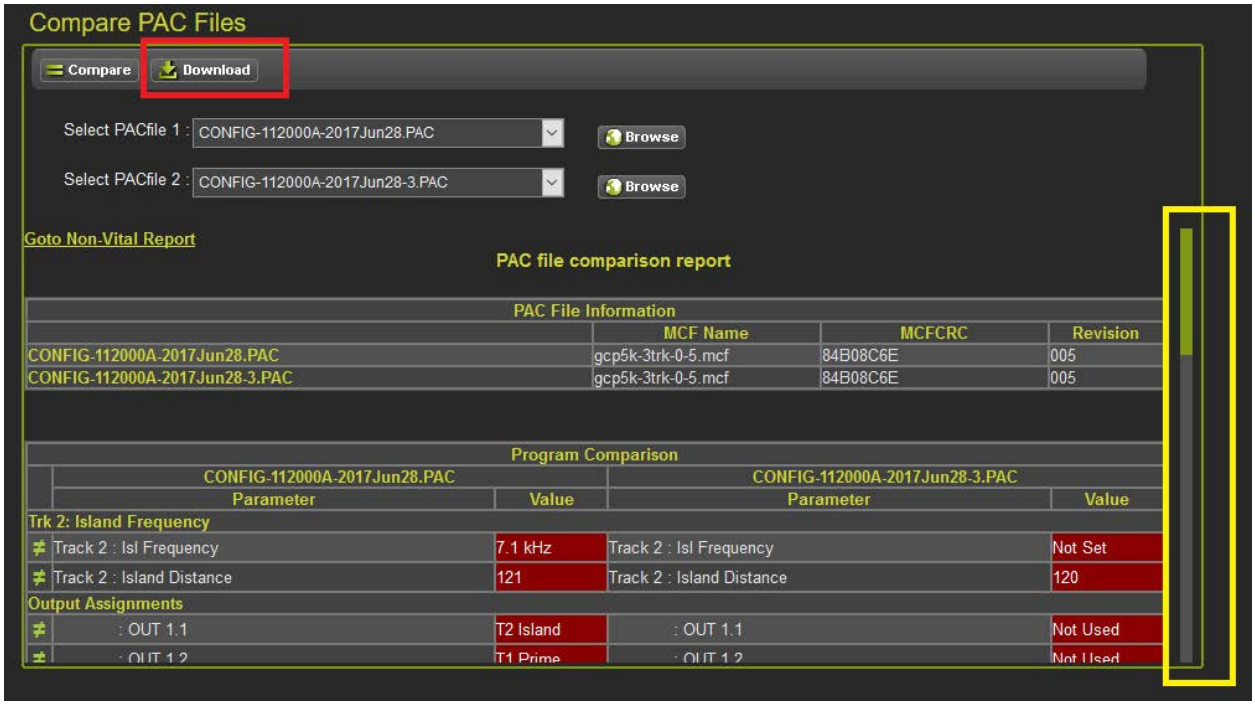


Figure 4-138 Comparison of Non-Identical PAC Files

The comparison report can be saved by selecting the **Download** button. The **Save** option will save the file to the default download location for the browser with the name PAC_comparison_Report.html.

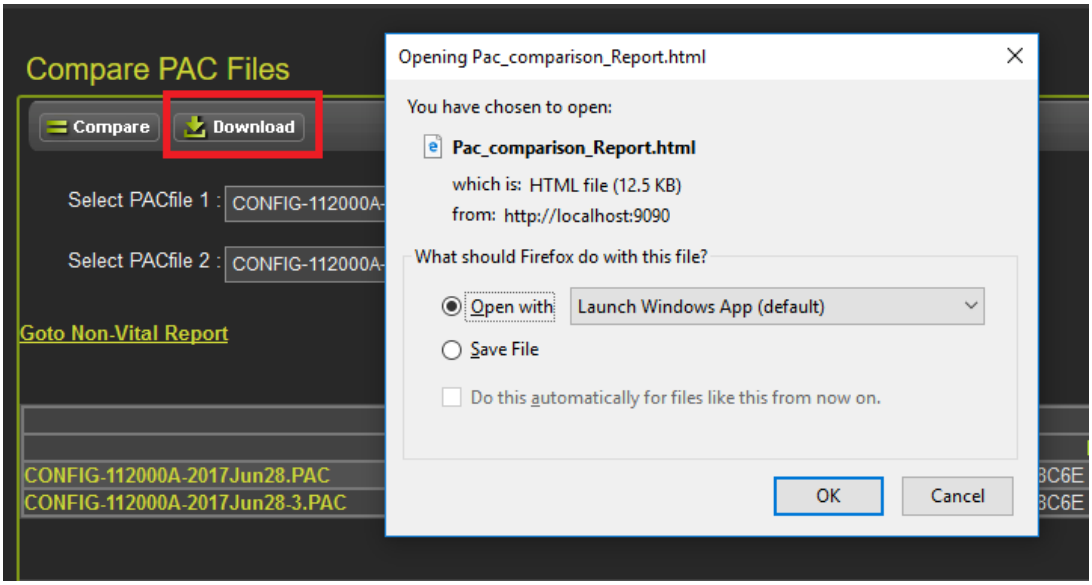


Figure 4-139 Download Comparison Report

Compare can be used to compare PAC files created with a different MCF. Newer GCP MCFs may have had new configuration parameters added to them, or parameter names may have changed. The **Compare** option allows the user to visually identify any differences in parameters. New parameters will have a plus symbol in the far left column, and then the new parameter title and values will be shown as below on the right side (in the yellow box). Changed parameters will be highlighted in red.

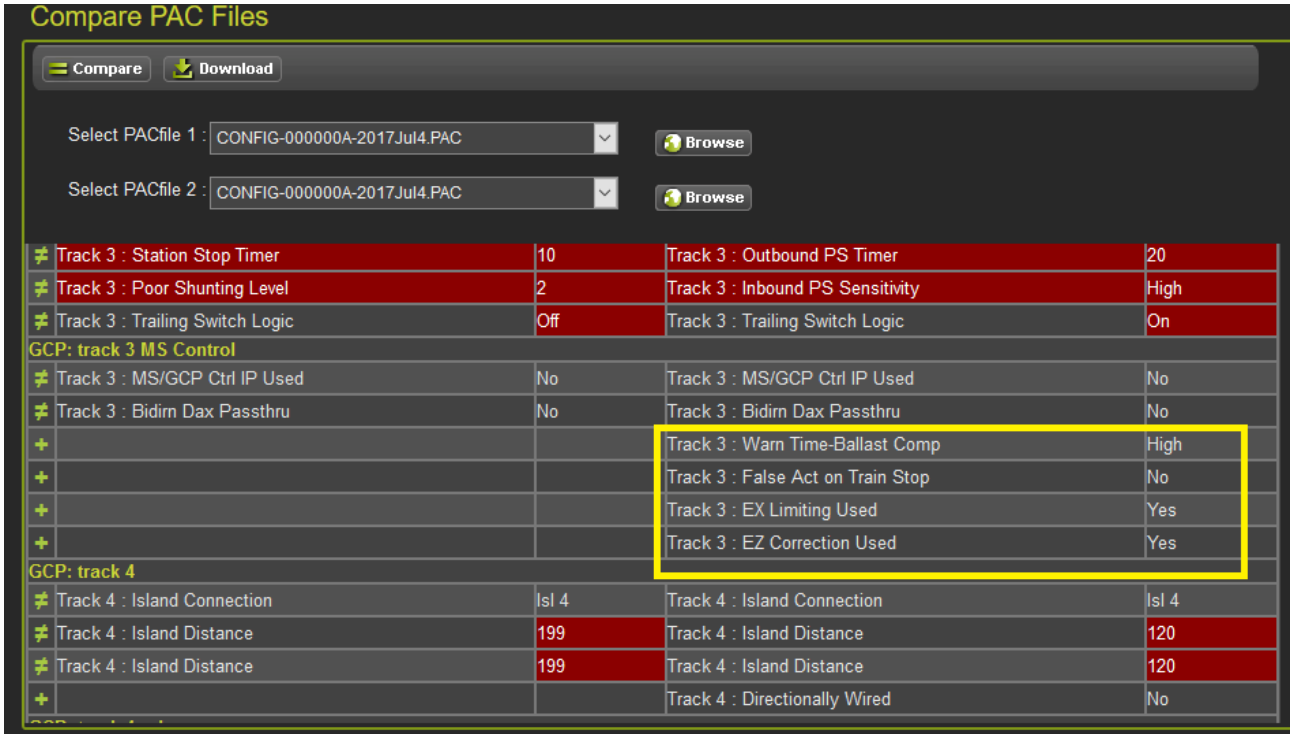


Figure 4-140 Comparison between PAC Files Using Different MCFS

Since the user may choose to keep the ZIP files under configuration management rather than the PAC files, the PAC file comparison can also be used to compare the PAC file included in a ZIP files, so that the user doesn't have to unzip and extract the PAC first.

To do this, simply select the ZIP files instead of the PAC file, and then click **Compare** as before. The OCE will automatically extract the PAC file from the ZIP then perform the comparison.

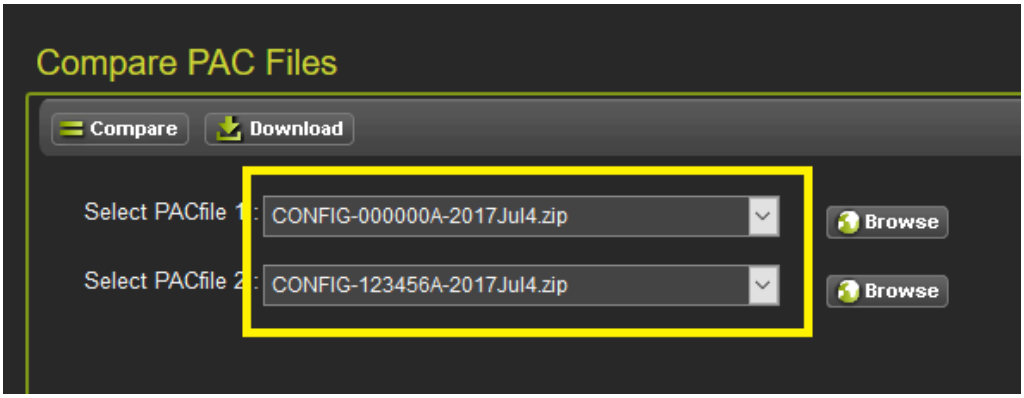


Figure 4-141 Comparison between ZIP Files

The **Compare** will also allow comparison between a ZIP file and a PAC file, for example, if you have a PAC file downloaded from the field and the ZIP file created in the office.

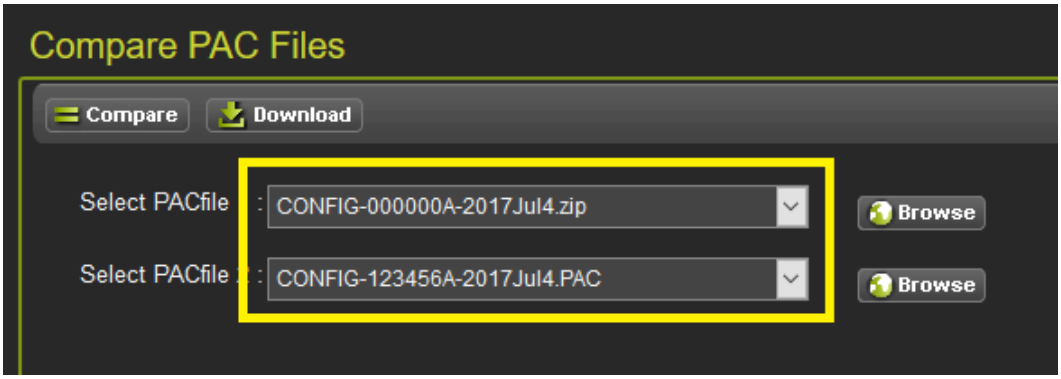


Figure 4-142 Comparison between ZIP and PAC Files

4.6 WayConneX Sites

The OCE can be used to create a WayConneX installation. The OCE is used to:

- Set the vital MCF parameters for the WayConneX MCF
- Set the PTC related parameters, e.g. Class D settings, EMP settings, WIU message layout
- Set other non-vital configuration parameters
- Obtain the UCN for the specific installation
- Obtain the PTC UCN for the specific installation if it is used for PTC
- Obtain the configuration report containing the configuration settings
- Create the configuration files that can be loaded onto the CPU III using the Web UI

To create a site, select the **WC CPU III** option under **Create New Site**.

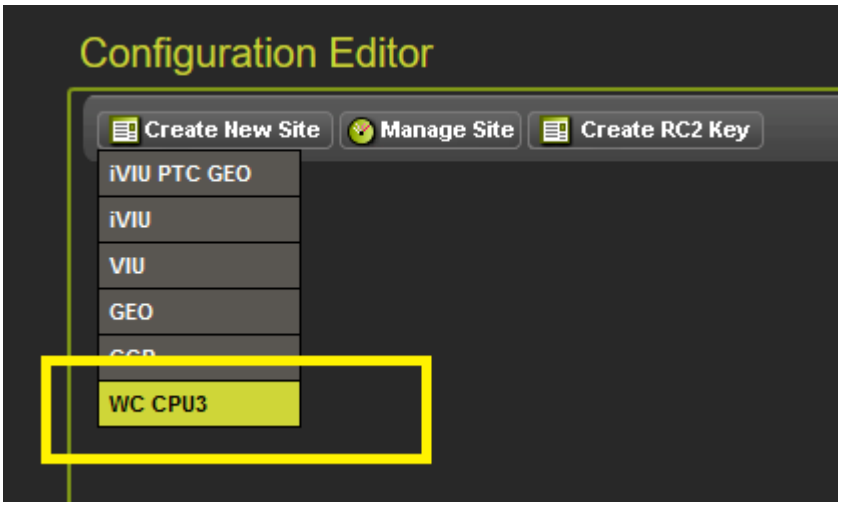


Figure 4-143 WayConneX Site

The OCE will open the **Select MCF** window. Select the WayConneX MCF either by:

- using the drop-down arrow which will show MCFs that have already been used before, or
- by selecting **Browse** and choosing the MCF and manually entering the MCF CRC from the MCF's log file.

Select **Create Site** and the OCE will process the MCF and return to the Configuration Editor Screen and show the non-vital and vital configuration menus.

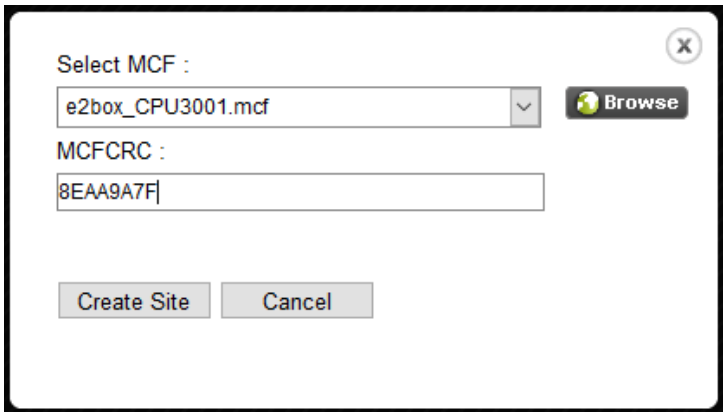


Figure 4-144 Select WayConneX MCF

NOTE

NOTE

When creating a new site, the OCE will ask for a MCF. The OCE keeps a repository of MCFs by site type, so if a MCF has been previously used or has been imported using the File Manager, the MCF will appear in the drop-down menu. After selecting the appropriate MCF, OCE will automatically fill in the MCF CRC if the .log file is present in the repository. If the MCF has not been used before it will be necessary to click on the **Browse** button to find the MCF and manually enter the MCF CRC which is obtained from the MCF's log file. The OCE will then copy the MCF over to its repository, so that if it is used again, it will be accessible from the drop-down menu.

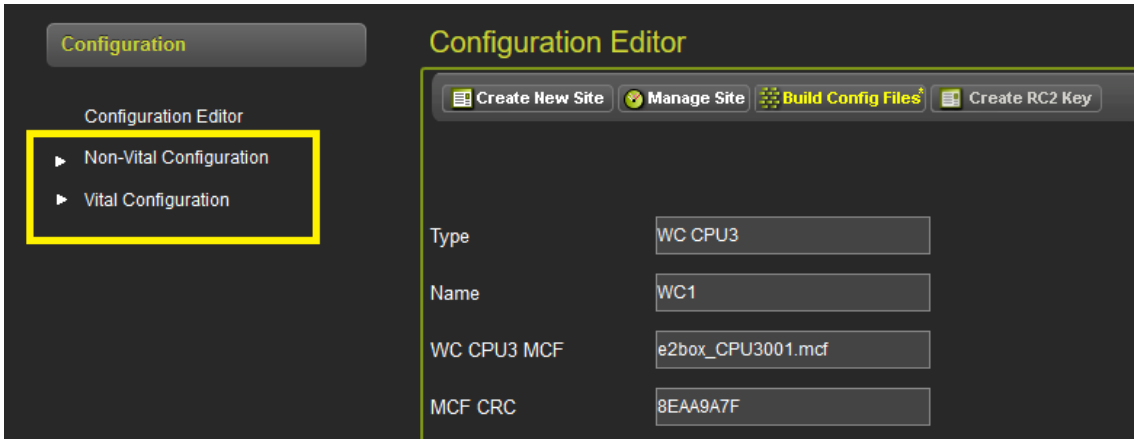


Figure 4-145 Configuration Menu

4.6.1 Vital Configuration

The Vital Configuration menu may have many submenus as shown below, the exact ones depend on the MCF. The following are some example variations:

- PTC application – Vital PTC Configuration menu shown
- Non-vital controller present– CTC Connection Configuration menu shown
- Vital Comms session between WayConnex units – Vital Comms Configuration menu shown

The Logic Configuration contains configuration parameters specific to the MCF and will usually show the Properties and Timers menu as illustrated in the figure below.

Figure 4-146 Timers Menu

The Module Configuration contains configuration parameters for each module in the chassis.

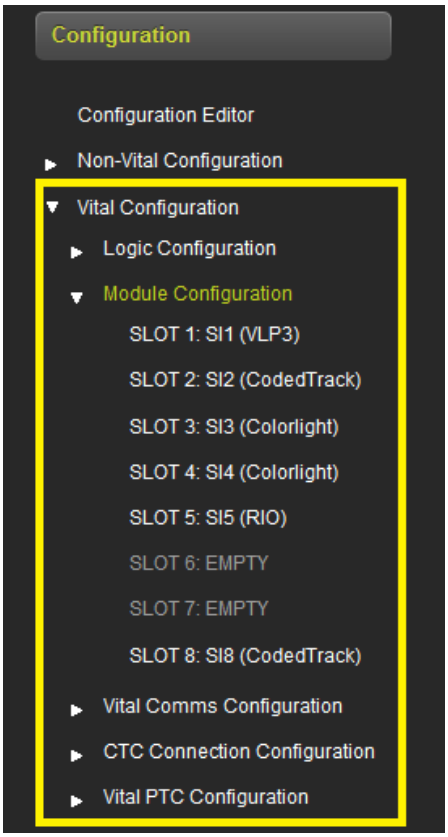


Figure 4-147 WayConneX Vital Configuration Menu

Edit the vital configuration and change the parameters to the desired values.

NOTE

NOTE

In PTC-enable applications the parameters under the Vital Configuration / Vital PTC Configuration are read only, these values are automatically changed when the WIU message layout under the Non-Vital configuration / PTC / Message Layout is changed.

4.6.2 Non-Vital Configuration

The Non-Vital Configuration has many submenus containing information that may need configuring for a WayConneX installation. This section will outline the main changes, but will not discuss in detail each parameter on each screen, see the WayConneX Manual (SIG-00-15-04) for specific details for each parameter.

4.6.2.1 Site Configuration Menu

In the Site Configuration menu set:

- The Site Name – this defaults to name of project
- The DOT number if applicable
- The Mile post if applicable
- Time Zone
- The ATCS address of the unit if applicable.

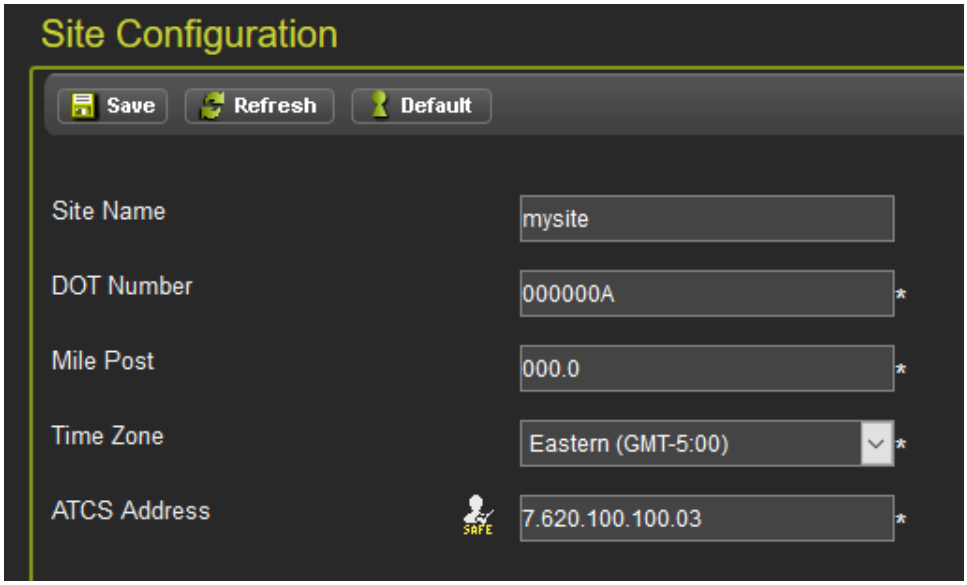


Figure 4-148 Non-Vital: WC Site Configuration Menu

4.6.2.2 Applications Menu

If systems management is being used for this site it is necessary to load and set up CDL. Go to the applications / CDL menus to perform this. Section 5.1 contains details on how to setup CDL applications.

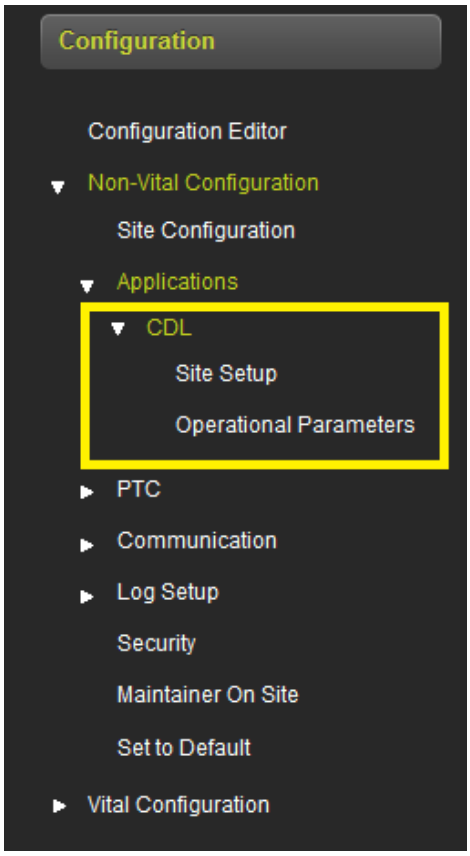


Figure 4-149 Non-Vital: WayConneX Application Menu

4.6.2.3 PTC Menu

The PTC submenus are where most changes will be required for WayConneX applications. See the PTC section (5.2) for more detailed information about these screens.

If the railroad has specific defaults values that they want to use for the PTC (or other non-vital) fields which don't match the standard default values, save these as a template (see section 3.2.5) and use the template for future applications.

NOTE

Class D Test parameters are configured under the Maintenance / PTC Class D Tests menu.

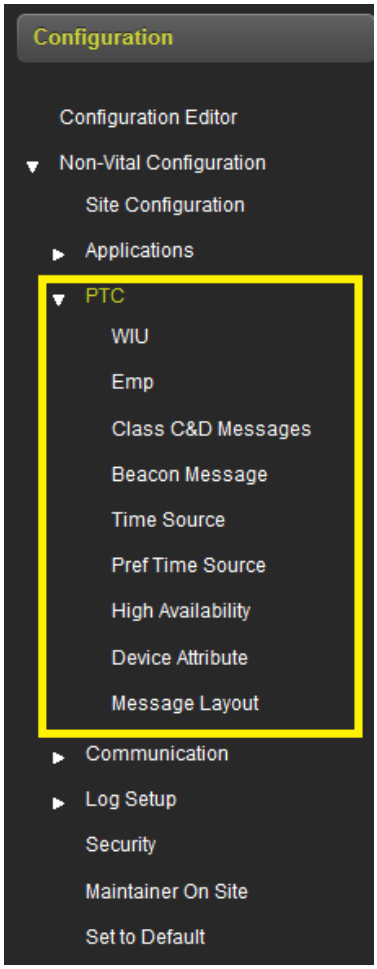


Figure 4-150 Non-Vital: WayConneX PTC Menu

4.6.2.4 Communication

The Communication submenu is used to set up:

- The CPU III Ethernet and serial port
- DNS names for the IP ports
- SNMP options for reporting data to the office
- Router Settings, for example whether to route vital messages via the Ethernet or Echelon.

See the WayConnex Manual (SIG-00-15-04) for details of how to use these parameters.

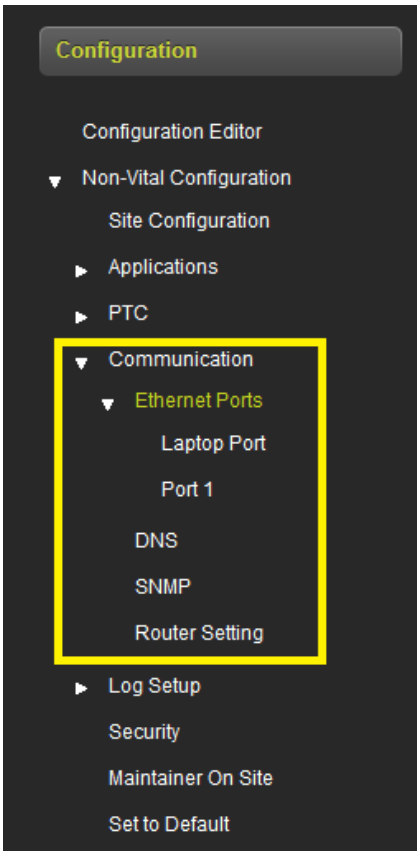


Figure 4-151 Non-Vital: WayConneX Communication Menu

4.6.2.5 Log Setup

The Log Setup menu is generally only used by Siemens personnel for diagnosing issues in the field; in general these parameters won't be changed in the OCE.

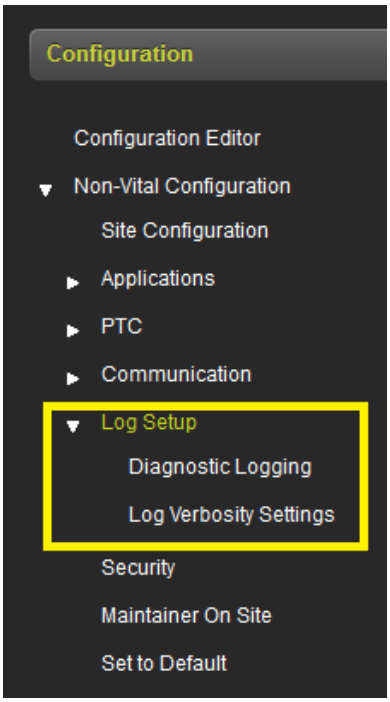


Figure 4-152 Non-Vital: WayConneX Log Setup Menu

4.6.2.6 Security

The Security menu is used to set the password for the Web UI and to set the session inactivity timer. See the WayConneX Manual (SIG-00-15-04) for further details on security setup.

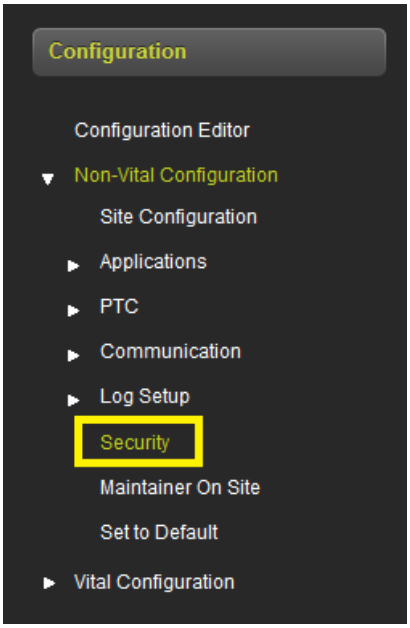


Figure 4-153 Non-Vital: WayConneX Security Menu

4.6.2.7 Maintainer On Site

The **Maintainer On Site** menu is used to set a timer to suppress Door alarms when the maintainer is on site. See the WayConneX Manual (SIG-00-15-04) for further details on Door alarms.

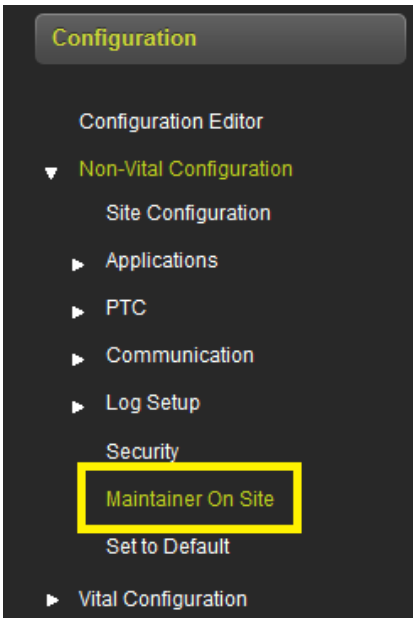


Figure 4-154 Non-Vital: WayConneX Maintainer On Site Menu

4.6.3 Build Configuration Files

After the configuration values in the Non-Vital and Vital Configuration have been entered, select the **Build Config Files** button shown below. After a few seconds the OCE will show a message indicating build created successfully.

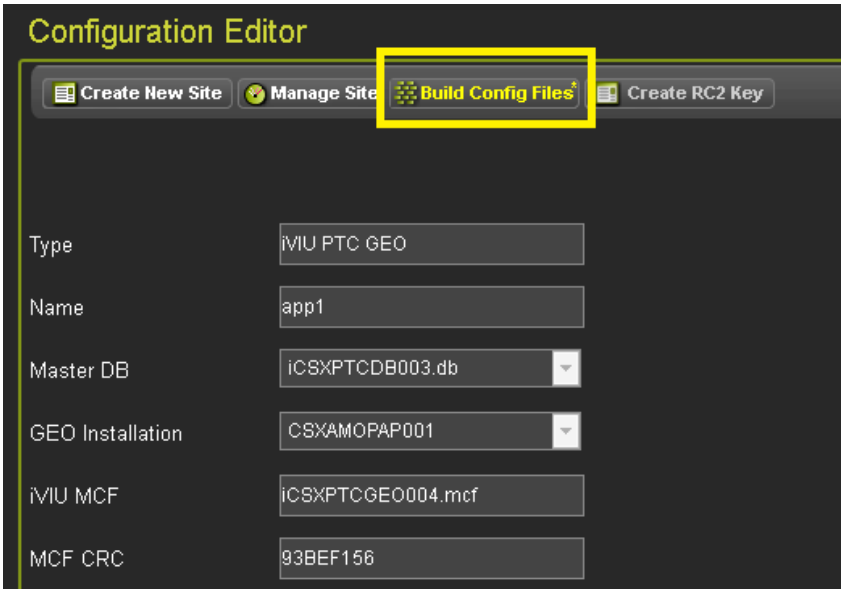


Figure 4-155 Build Config Files

The OCE will then show the Config Reports button. To view or download the report click the **Config Report** button and select the desired option.

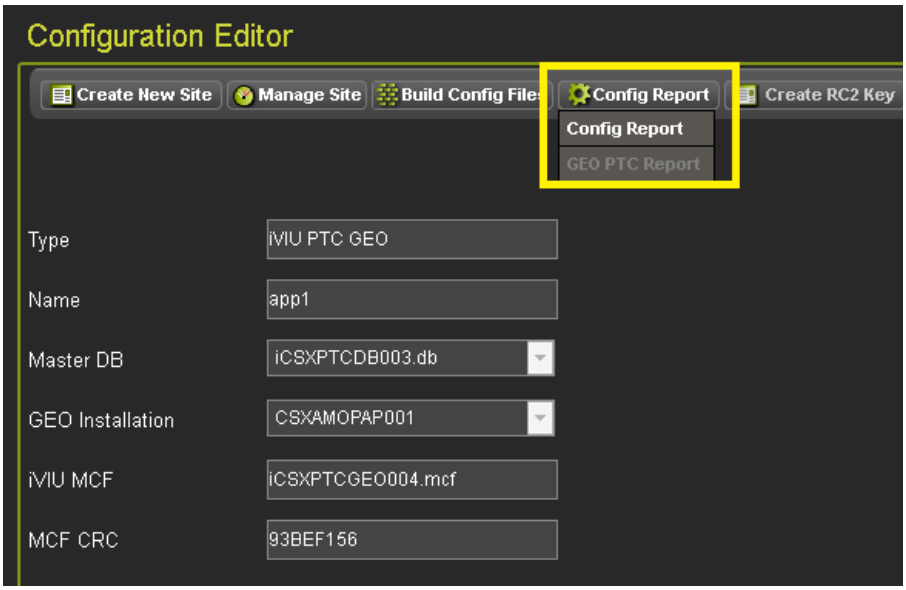


Figure 4-156 Config Reports Button

WARNING

THE CONFIGURATION REPORT MUST BE CHECKED TO ENSURE THAT THE PARAMETERS THAT AFFECT SAFETY ARE CORRECTLY SET.

At the end of the configuration report the UCN for the location is printed. This will need to be entered into the unit in the field via the Web UI or Local UI. To ensure that the correct configuration is downloaded into the correct site, it is not downloaded automatically as part of the ZIP file. The report also contains the PTC UCN, this also will need to be manually set for the equipment in the field if the iVIU is used in a PTC application. The PTC UCN will be 0 for a non-PTC application.

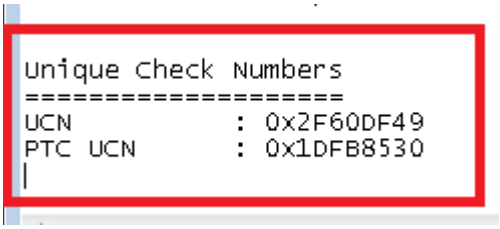


Figure 4-157 UCN/PTC UCN in Configuration Report

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SECTION 5 NON-VITAL CONFIGURATION

5.0 NON-VITAL CONFIGURATION

5.1 CDL

The following set of procedures will detail the installation of a CDL application file, the setup and compilation of a CDL file, viewing CDL Logs, and the removal of a CDL file. The setup of CDL Operational Parameters (if applicable to the CDL application file) will also be shown.

First, select the CDL menu under Non-Vital Configuration / CDL to get to the CDL screens. The figure on the left shows menus from a WC CPU III, and the figure on the right from a GCP 5000 site.

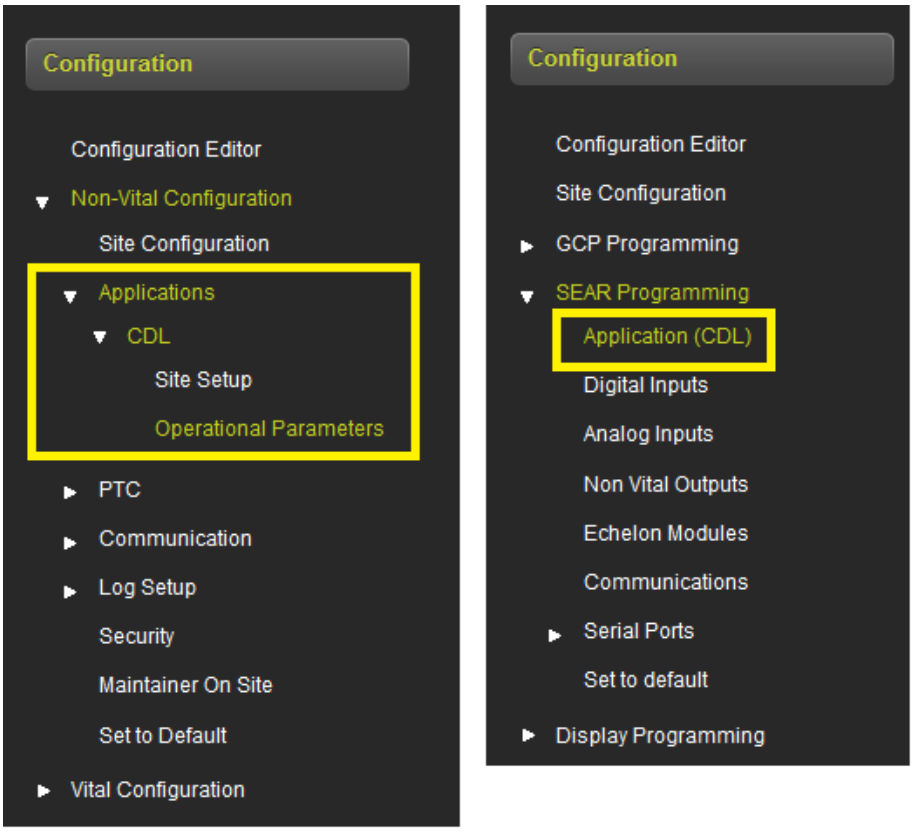

Figure 5-1 CDL Menu

When the Site Setup or Application (CDL) is selected the OCE will show the screen illustrated in the following figure. From this screen select the **Upload CDL** button.

Figure 5-2 Upload CDL

The OCE will show the following screen which allows the CDL to be selected using the **Browse** button.

Figure 5-3 Browse for CDL

When the CDL has been selected, it will show in the CDL file text box and an **Update** button will appear. Press the **Update** button.

Figure 5-4 Update CDL

The OCE will now show the name of CDL that has been loaded. Now press the **Start** button.

Figure 5-5 Start CDL

The OCE will ask to reset the Names/Modules, select the appropriate answer. The OCE will then sequence through the list of questions (if present) from the CDL. Answer each in turn, pressing **Next** between each question. To return to a previous question select the **Previous** button, or to start all the questions again, press the **Restart** button.

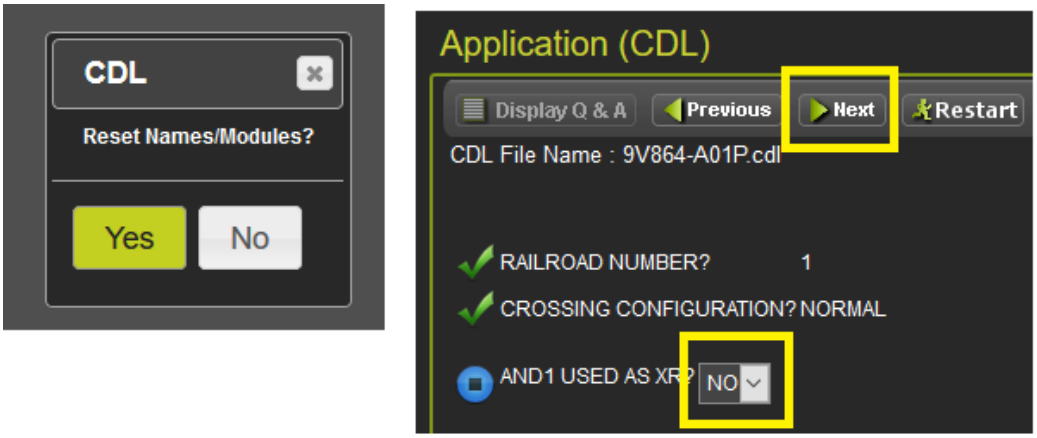

Figure 5-6 CDL Questions

When all the questions have been answered, the OCE will ask to compile the file. Select **Yes** to continue the process. The OCE will the show a message indicating whether the compilation was successful or not.

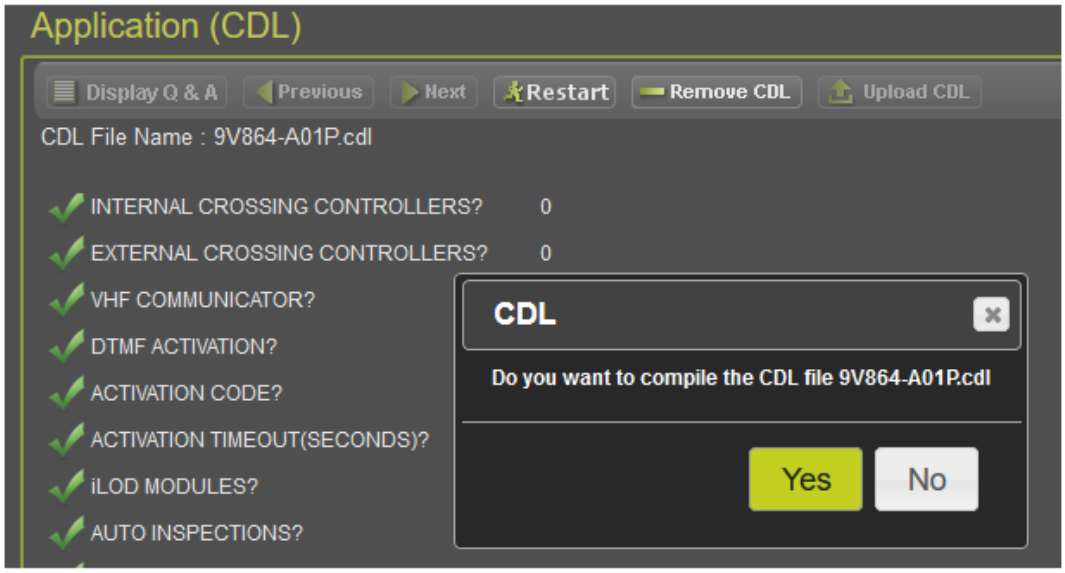

Figure 5-7 Compile CDL Message

To check the answers to questions, press the **Display Q&A** button.

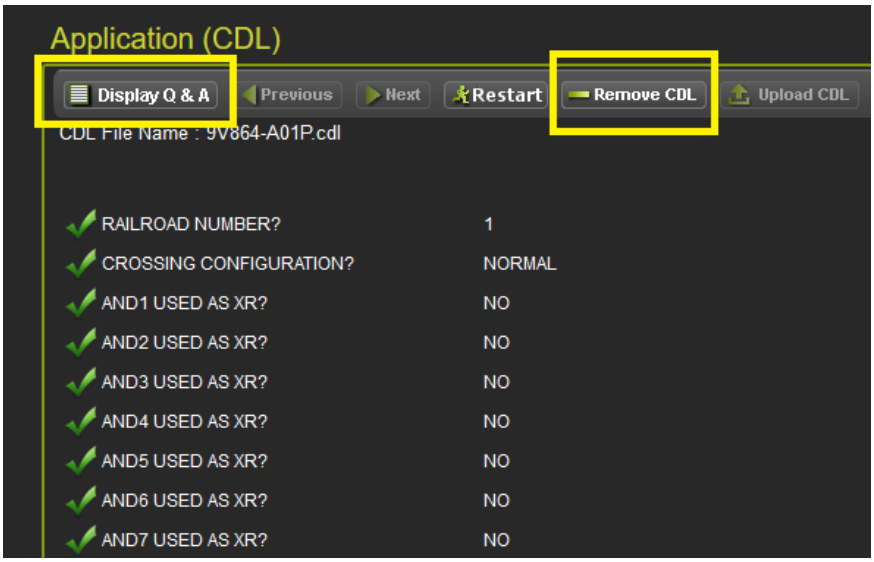

Figure 5-8 Display Q&A

Use the **Remove CDL** button to remove the CDL, this will enable the **Upload CDL** option so a different CDL can be loaded.

In iVIU PTC GEO, iVIU, or WayConneX applications the CDL may also have operational parameters. To select these, first load the CDL and compile it as described above, then go to the Operational Parameter menu. Set the operational parameters as required. The CDL has to be compiled prior to adjusting the operational parameters. If it is not compiled, the operational parameters will not be visible.

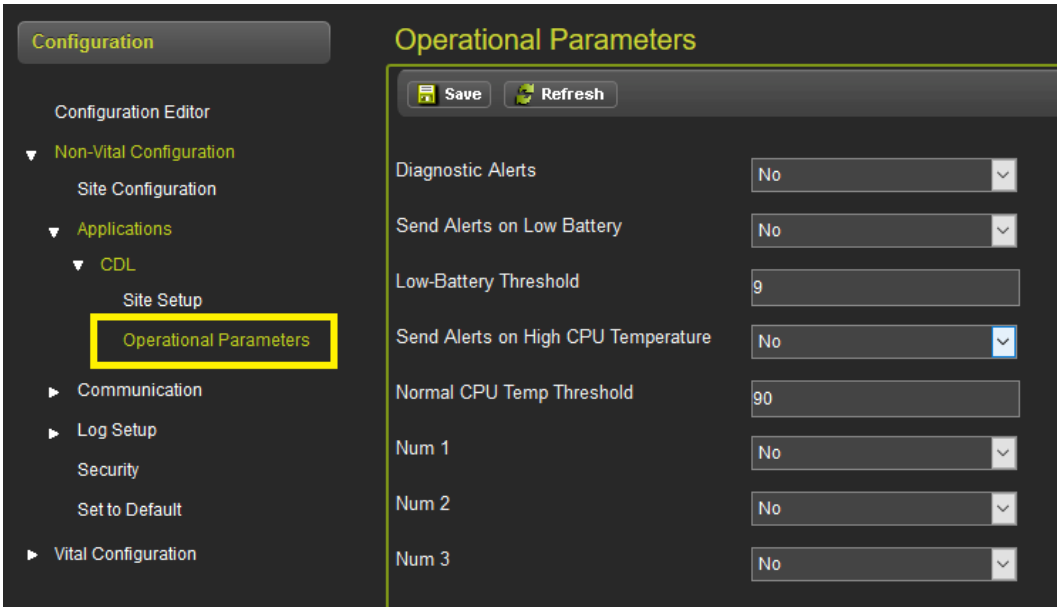

Figure 5-9 CDL Operational Parameters

5.2 IVIU PTC GEO/IVIU/WC-CPU III PTC MENU

This section discusses the Non-Vital Configuration PTC menu used in iVIU, iVIU PTC GEO, and WC CPU III sites. The PTC menus for VIU sites have a different layout, see sections 4.3.2.2 to 4.3.2.9 for details.

Class D Test parameters for these types of sites are configured under the Maintenance / PTC Class D Tests menu; see section 6.1.4.

Click on the **Non-Vital Configuration PTC** menu to see the PTC submenus.

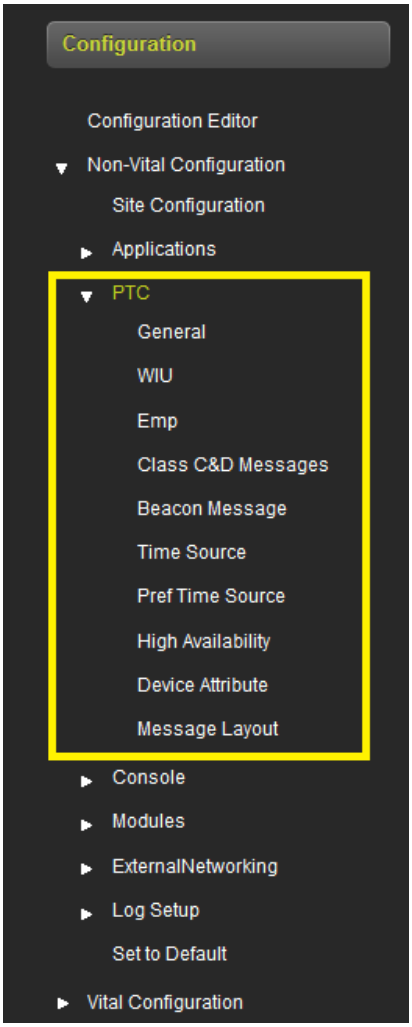

Figure 5-10 Non-Vital Configuration - PTC Menu

5.2.1 PTC – General

PTC Enable GEOs: set to **Yes** for PTC enabled GEO applications (set to **Yes** automatically by OCE)

Console as NV Logic Ctrlr: **Yes**, **No**, defaults to **No**. Leave as **No** as this feature is not currently supported

Log GEO Events: **Yes**, **No**, defaults to **Yes**. This is used to select whether the GEO sends events to the Console for logging in the Console Event Log. In general, this can be set to **Yes**. Would only set to **No** on a very large GEO set up with many GEO units being monitored by one Console where the Echelon link is near capacity.

Sync GEO and SEAR clocks: **Yes**, **No**, defaults to **No**. Used to select whether that the Console should send time updates to the GEO and SEAR to synchronize their time from that of the Console.

WIU Channel Enabled: **Yes**, **No**, defaults to **Yes**. Used to enable the Console to send PTC messages. Keep as **Yes**.

Send Msg on Change of State: **Yes**, **No**, defaults to **Yes**. When set to **Yes** the GEO will send an updated state to the Console when the state of the data sent to the console changes. When set to **No**, the GEO will not send on change of state.

Msg Timeout (minutes): 5-240, defaults to 5 minutes. This is the message timeout on the GEO from the Console. If the GEO does not receive a valid message from Console in this time, it will set the link to **Out of Session** and stop sending messages to the Console. This is only used as a **Keep Alive** message so that the GEO will stop sending messages if the Console is removed, meaning, this is a non-vital function. The vital timeout on the Console is set using the **Msg Update Rate** (see below).

Msg Update Rate (ms): 500-3000ms, default 1500ms. This sets the message update rate on the GEO for messages sent to the Console. The Console will set a message timeout to the (2 * Msg Update Rate) + 100ms. If the Console receives no valid messages from the GEO in this message timeout, it will set the link to **Out of Session** and report the PTC devices associated with this GEO as restrictive.

5.2.1.1 iVIU PTC GEO Site

For these sites, PTC Enable GEOs is automatically set to **Yes**. See iVIU Console Manual (SIG-00-11-05A) and PTC Console Manual (SIG-00-130-12A) for details of how to set these parameters.

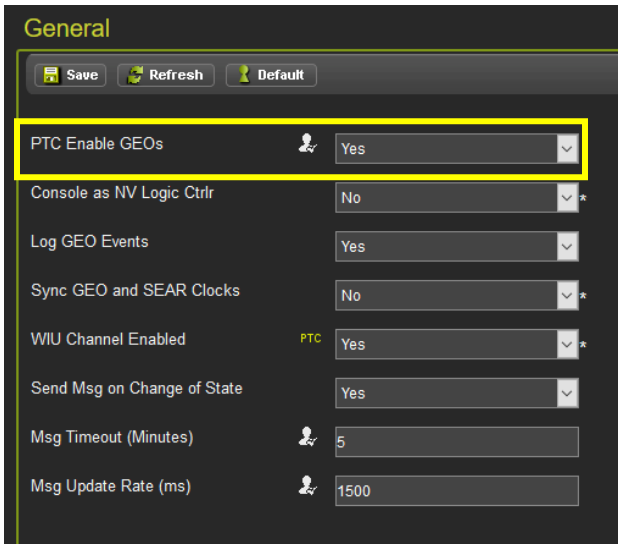

Figure 5-11 PTC Configuration - General Parameters or iVIU PTC GEO

5.2.1.2 iVIU Site:

For iVIU sites, PTC Enable GEOs is automatically set to **No**. No further changes will be needed on this screen.

5.2.1.3 WC-CPU III Sites:

There are no General screens in WC-CPU III site applications.

5.2.2 PTC – WIU

Click on the WIU menu to open the WIU parameters screen. The parameters on this screen are used to fill in fields in the WIU Config xml file.

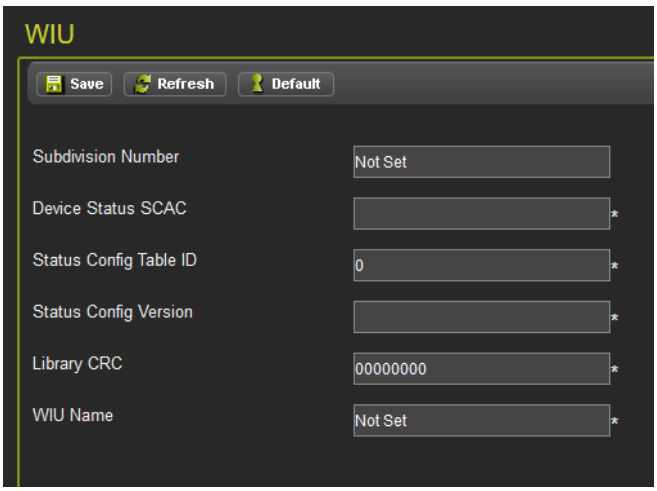

Figure 5-12 PTC Configuration - WIU Parameters

5.2.3 PTC – EMP

Click on the EMP menu to open the EMP parameters screen.

The WIU Addr field, shown in the yellow box, is used to set the WIU Address in the vital payload portion of the PTC message.

The fields shown in the green box are used to set values in the EMP header fields in the PTC message.

The HMAC key is also entered on this screen.

The RC2Key can also be entered here, when it is entered it is not displayed to the user, hence the user has to re-enter it to confirm. Entering the RC2Key will cause an RC2Key.bin file to be created for the site. The user may choose to have a common RC2Key across many sites, or they may choose to have different personnel set the RC2 for the person setting up the site, in which case they can use the **Create RC2Key** button in the Configuration Editor and create the RC2Key independently of a specific site.

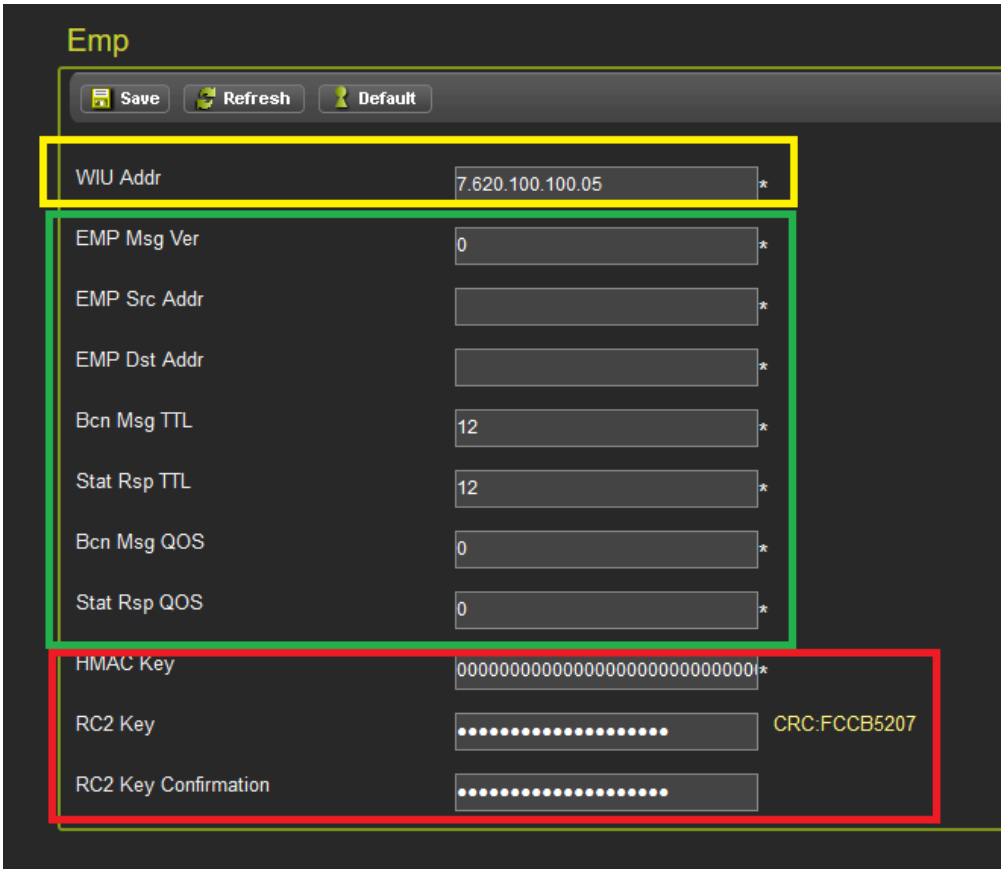

Figure 5-13 PTC Configuration - EMP Parameters

5.2.3.1 PTC Configuration – Class C & D Messages

Click on the Class C&D Messages menu to open the Class C&D Messages parameters window. Use the scroll bar on the right to scroll down to other parameters. See the iVIU manual (SIG-00-11-05A), PTC Console Manual (SIG-00-130-12A), or WayConneX CPU III (SIG-00-15-04) manuals for details on how to use these parameters.

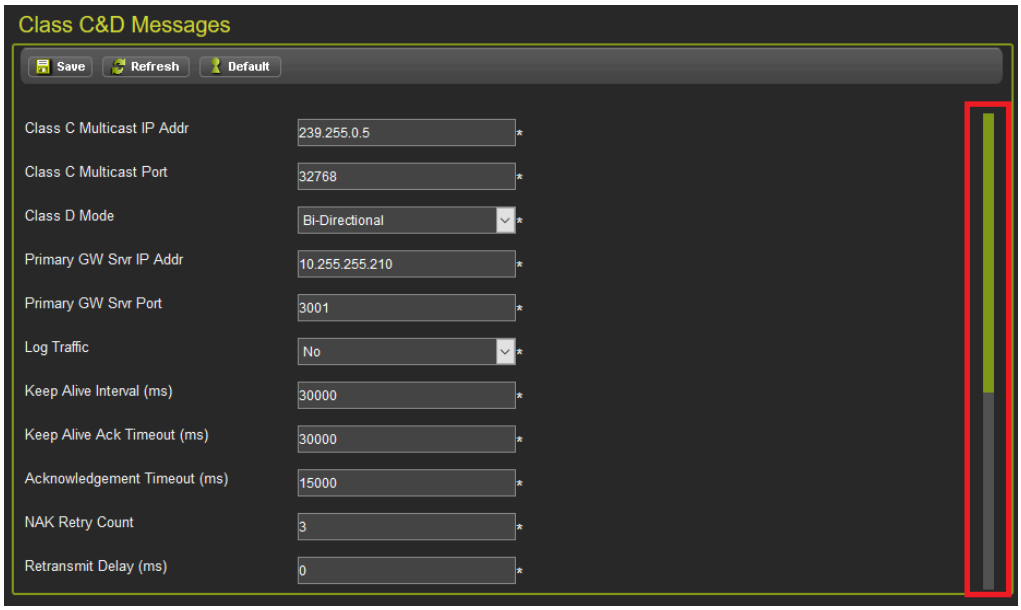

Figure 5-14 PTC Configuration - Class C&D Messages Parameters

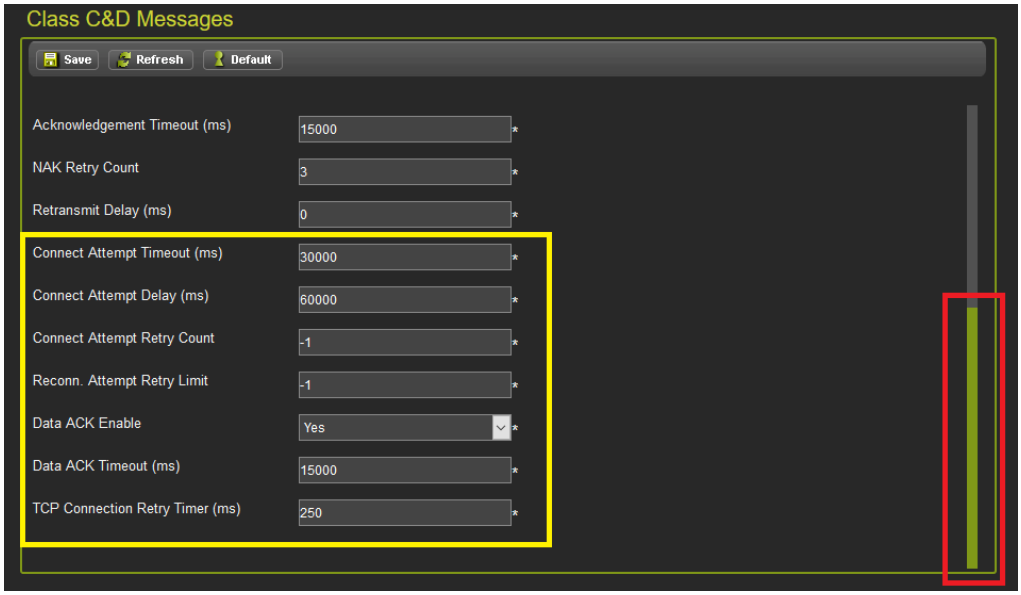

Figure 5-15 PTC Configuration - Class C&D Messages Parameters Continued

5.2.3.2 PTC Configuration - Beacon Message

Click on the Beacon Message menu to open the Beacon Message parameters. The parameters on this screen are used to setup the way that beaconing is performed. The parameters displayed depend on the whether the **Beacon Continuous** mode is set to **Continuous** or **Times Out**.

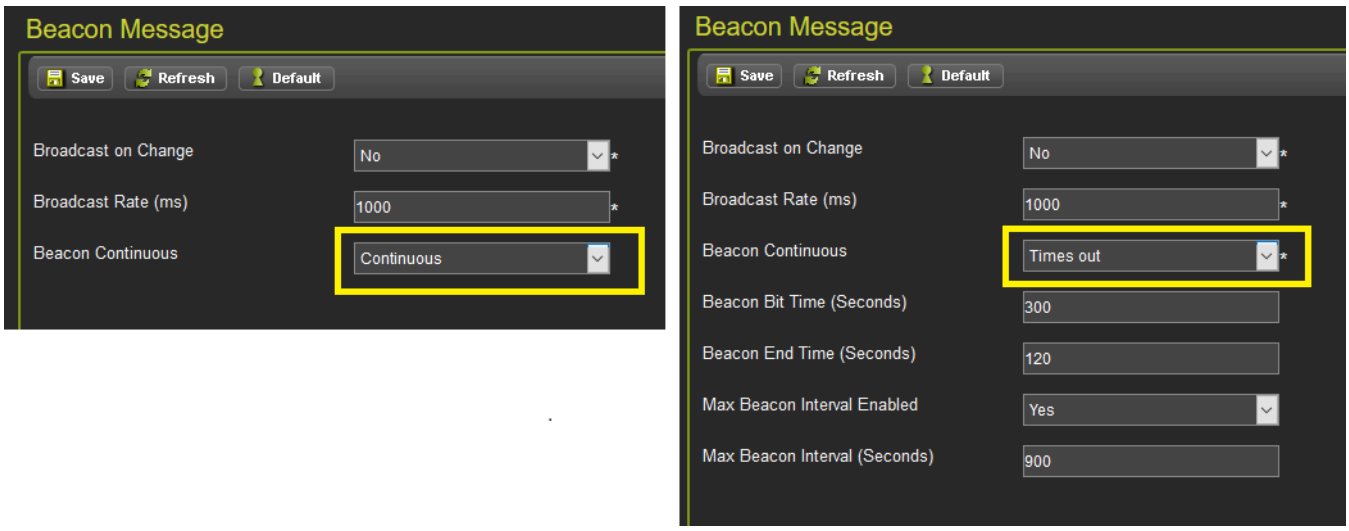

Figure 5-16 PTC Configuration - Beacon Message

5.2.3.3 PTC Configuration – Time Source

Click on the **Time Source** menu to open the **Time Source** parameters. Time source options include None, EMP, NTP, and Internal Receiver. In practice, the only two options likely to be used for PTC applications are EMP and NTP. When NTP is selected for **Time Source** the additional parameters shown on the right are displayed.

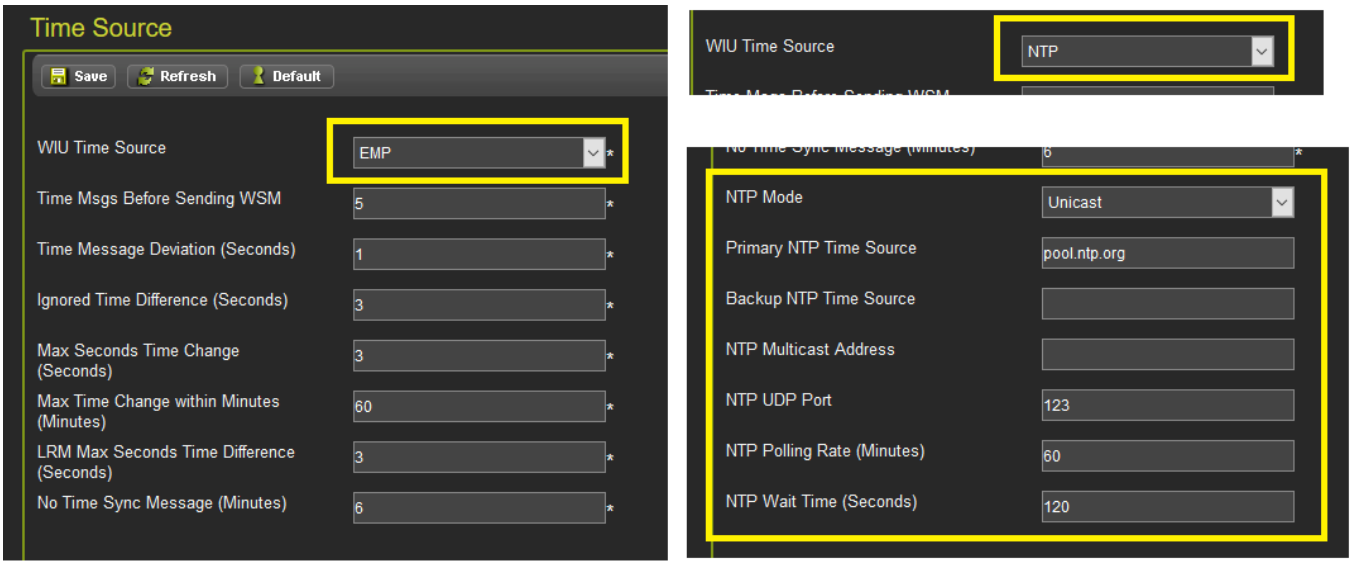

Figure 5-17 PTC Configuration - Time Source Parameters

5.2.3.4 PTC Configuration – Preferred Time Source (Pref Time Source)

Click on the **Pref Time Source** menu to open the Preferred Time Source parameters. The default has no preferred time source enabled (see figure on the left). When the preferred time source is enabled, up to six time source IP Addresses and priority levels can be configured. Use the scroll bar on the right to see the remaining parameters.

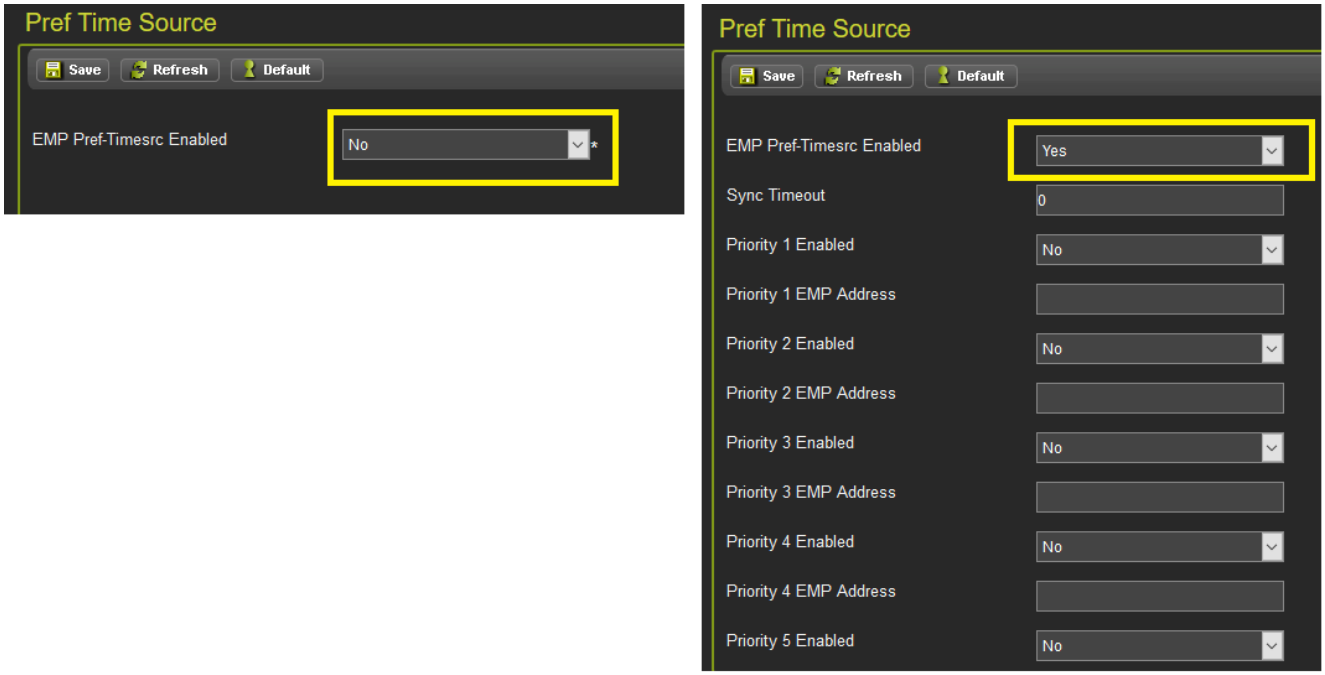

Figure 5-18 PTC Configuration - Preferred Time Source Parameters

5.2.3.5 PTC Configuration – High Availability

High Availability enables the user to configure multiple ranges of IP addresses and TCP (Transmission Control Protocol) port numbers which establish a TCP connection to the first Application Gateway that it locates when scanning those IP addresses. In the event that an IP Address and TCP port becomes unavailable, the system will attempt to secure a new communication link via one of the alternate IP Addresses.

The High Availability function can be enabled by selecting **YES** on the drop-down menu as shown in Figure 5-19.

The following parameters can be set for up to 12 servers as shown on the right. Use the scroll bar to scroll down to see the addition fields:

- IP address
- Port
- Idle timeout
- Idle enable

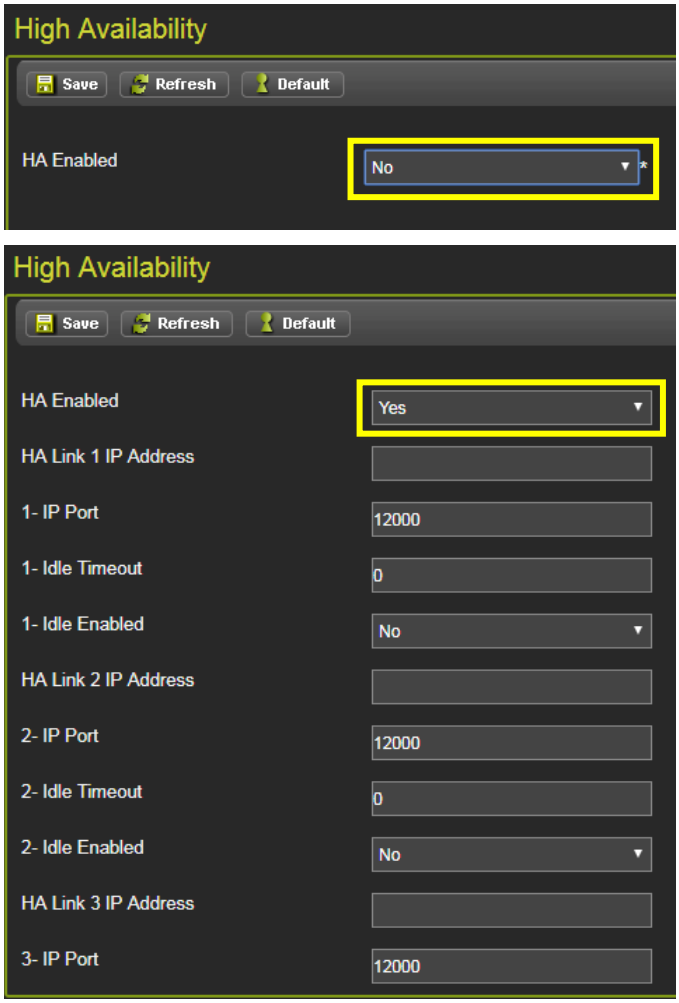

Figure 5-19 PTC Configuration - High Availability

5.2.3.6 PTC Configuration – Device Attribute

Click on the **Device Attribute** menu to open the Device Attribute parameters. In the figure below, signals and switch PTC devices are displayed relevant to the installation. The screen allows the user to add information for each PTC device that will be included in the WIU config xml file, namely:

- Site Device ID
- Signal / Switch / Hazard detector name
- Track number
- Direction
- Milepost – this will default to the value set on the Site Information page
- Subdivision number
- Site name – this will default to the value on the Site Information page
- Description

NOTE

NOTE

If the Vital Configuration has different Physical Layouts, these may have different PTC Devices associated with them. The correct physical layout must be chosen before information is set on this screen (see section 4.2.1).

The far right column is labeled **Include** and has a check box to select to include the device in the WIU message or uncheck the box to exclude the device from the WIU message.

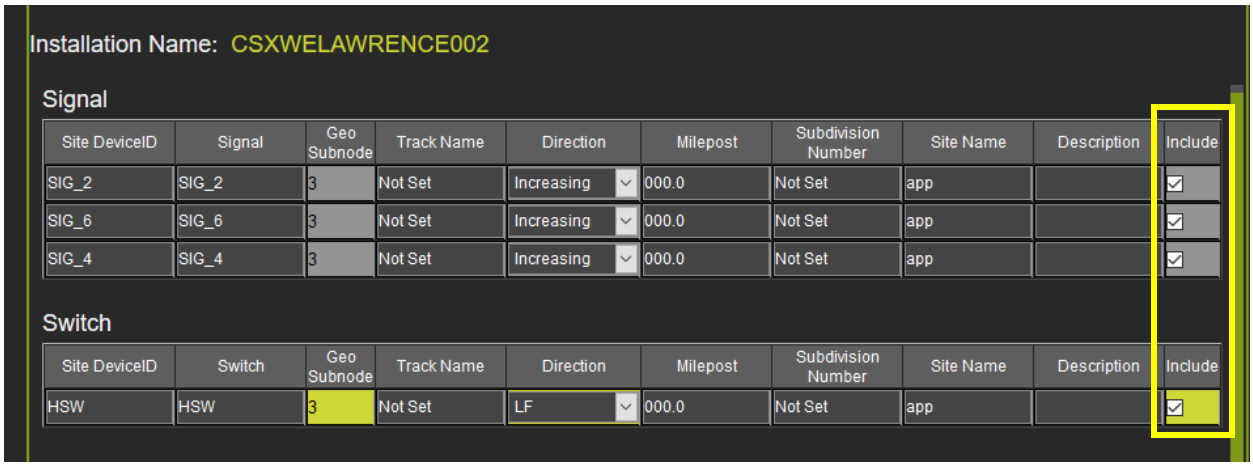

Figure 5-20 PTC Configuration - Device Attributes

NOTE

NOTE

Changing the Include check box value results in changes to the vital parameters in Physical Configuration/ITC Configuration. So if changes are made here, the user must rebuild configuration files using the **Build Config Files** button on the Configuration Editor.

When an IVIU PTC GEO site is created for an Appliance model GEO installation, the Device Attributes screen will also show the aspects information extracted from the GEO MCF and how it relates to the PTC Aspects. This information may be viewed but cannot be altered in this menu.

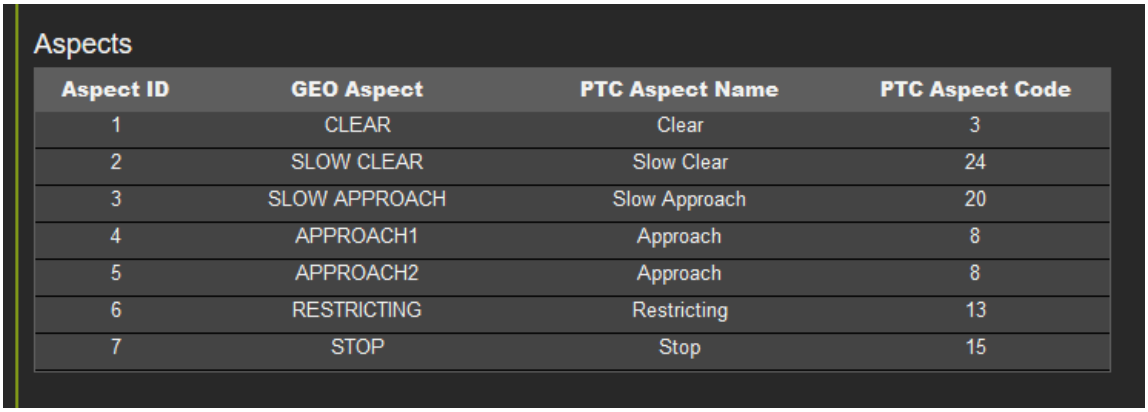

Figure 5-21 PTC Configuration - Device Attributes Aspects

5.2.3.7 PTC Configuration – Message Lay-out

The Message Layout screen displays the PTC devices included in the WIU message. This screen allows the user to specify the layout of the WIU message by rearranging the positions of the PTC Devices in the message. The user can choose which type of PTC device is reported first: signal, switch, or hazard detector. The user can choose the order of the signals from within the block of signals. Use the arrows on the left to change the order of the device types, and arrows on the right to change the order of the specific devices within that type.

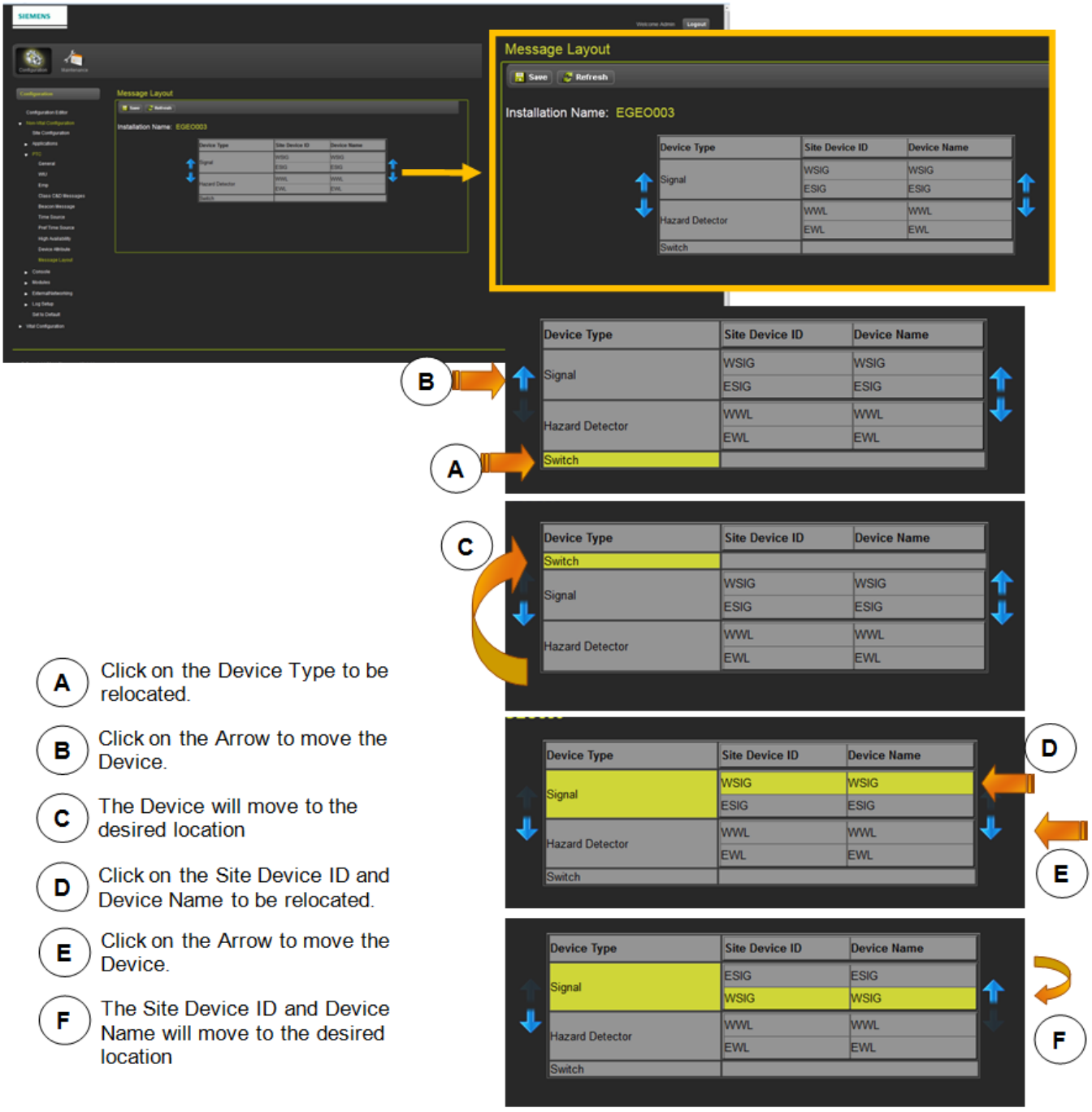

Figure 5-22 PTC Configuration - Message Layout Rearrange Positions

NOTE

NOTE

Changing the order of the devices on the Message Payout page and pressing **Save** will update the values of the Vital Configuration / Physical Configuration / ITC Configuration parameters. If changes are made here, the Configuration files must be rebuilt from the Configuration Editor page in order for changes to take effect.

SECTION 6 MAINTENANCE

6.0 MAINTENANCE

6.1 MAINTENANCE

The Maintenance application of OCE can be accessed by clicking on the Maintenance icon. The Maintenance menu has the sub-menus shown in the following figure.

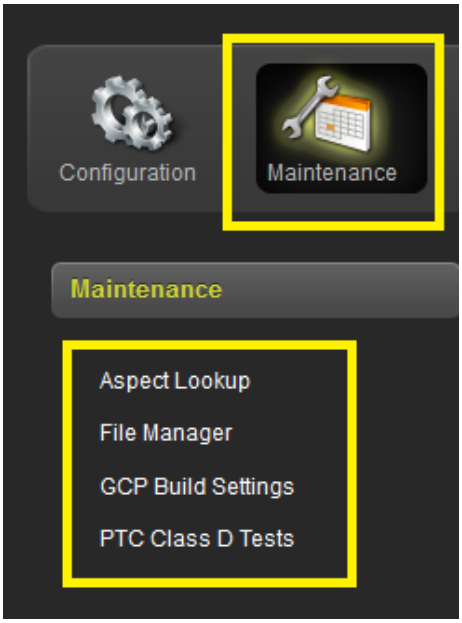

Figure 6-1 Maintenance Menu

- The Aspect Lookup menu is only used for iVIU PTC GEO sites.
- The GCP Build Settings menu is only used for GCP sites.
- The PTC Class D Tests menu is only used for iVIU PTC GEO, iVIU and WC CPU III sites.

6.1.1 Aspect Lookup

The Aspect Lookup function enables the selection of Aspect Lookup Tables and PTC Aspect Values for use in OCE. The list of Tables and Values will display files installed in OCE. The files are installed by importing the customer specific ZIP file for iVIU PTC GEO provided by Siemens. The user should choose the latest file applicable to them.

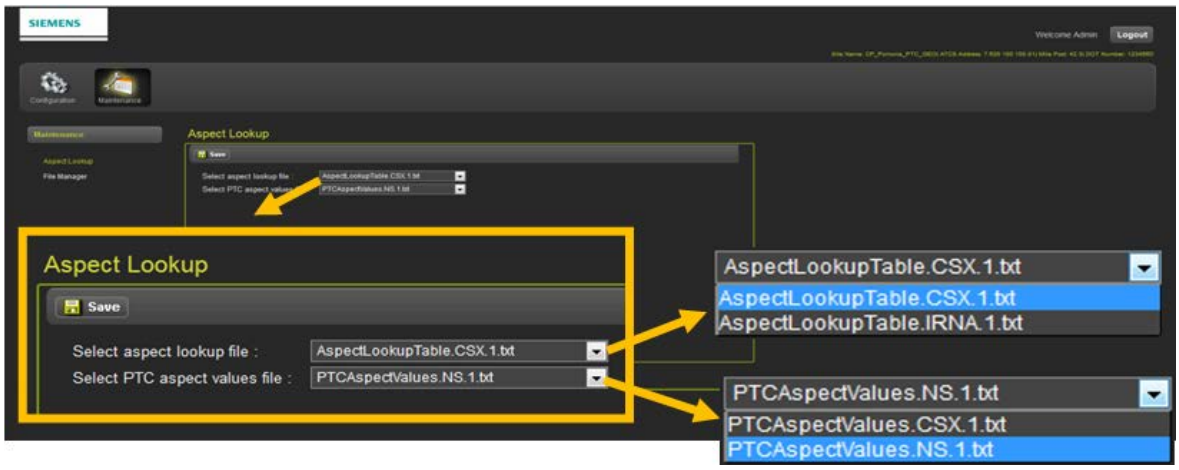

Figure 6-2 Aspect Lookup Tables and PTC Aspect Values Selection

When the OCE is used for the first time, the OCE may ask for selection of Aspect Lookup Tables. The figure below details the procedure to set up Aspect Lookup Tables.

A. Click on the **Select** button to bring up the Aspect Lookup screen
B. Select the Aspect Lookup file from the drop-down menu
C. Select the PTC Aspect Values file
D. Click on the **Save** button to save the selections

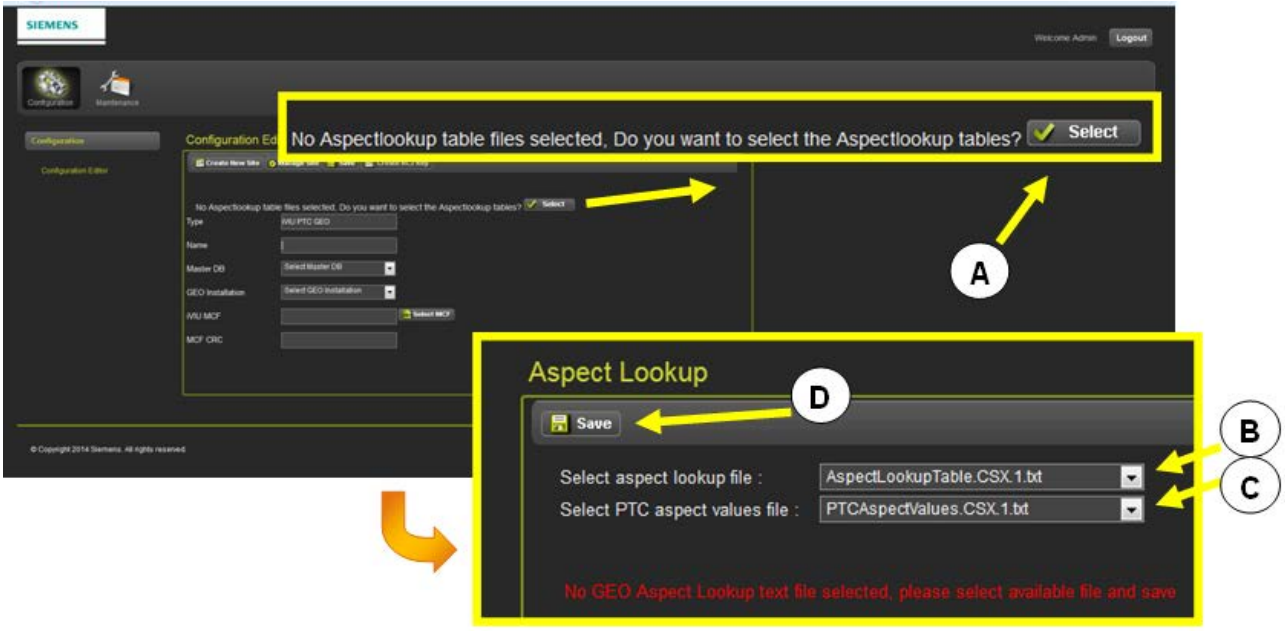

Figure 6-3 Selecting Aspect Lookup and PTC Aspect Value File Selection

6.1.2 Files Manager

The File Manager enables the user to Export and Import files or to remove any templates that have been saved and will no longer be used.

Figure 6-4 File Manager

6.1.2.1 Export Files

This is typically used if the user wants to replicate the OCE installation on another computer. The files are exported from one computer and imported into another. OCE files are exported in a .ZIP file. The OCE ZIP file includes the MCFs, master databases, PTC and Aspect Lookup files and templates. Click on the **Export Files** button and select to open or save the file as shown in the figure below.

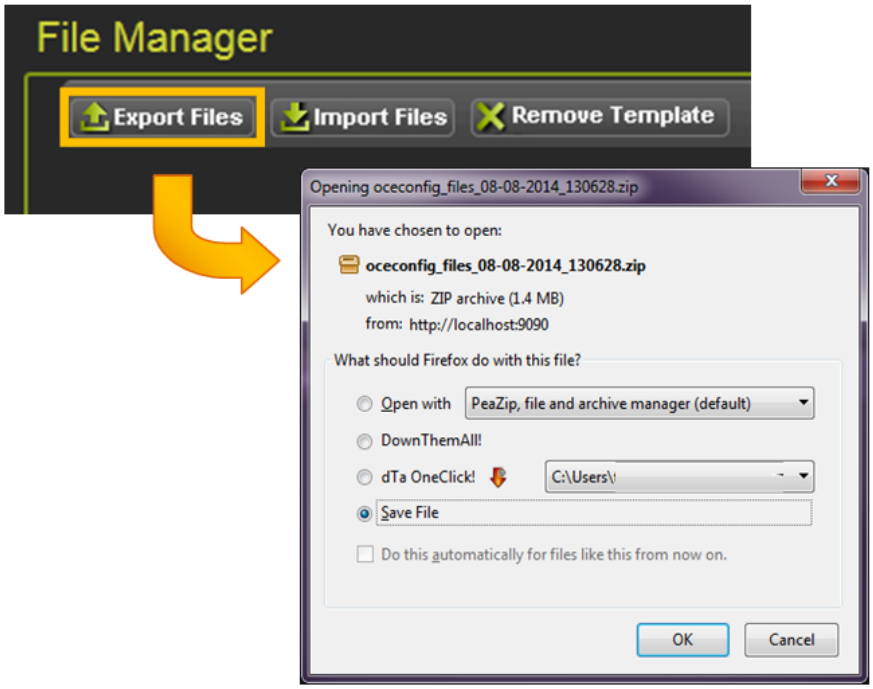

Figure 6-5 Export Files

6.1.2.2 Import Files

Files can be imported into the OCE using the **Import Files** function. The Import Files function is typically used to set up the OCE after initial installation with an import ZIP file provided by Siemens, or a file created on another computer installed with OCE. Click on the **Import Files** button and select the desired file. The file must be in a .ZIP format to import into OCE as shown in the file below.

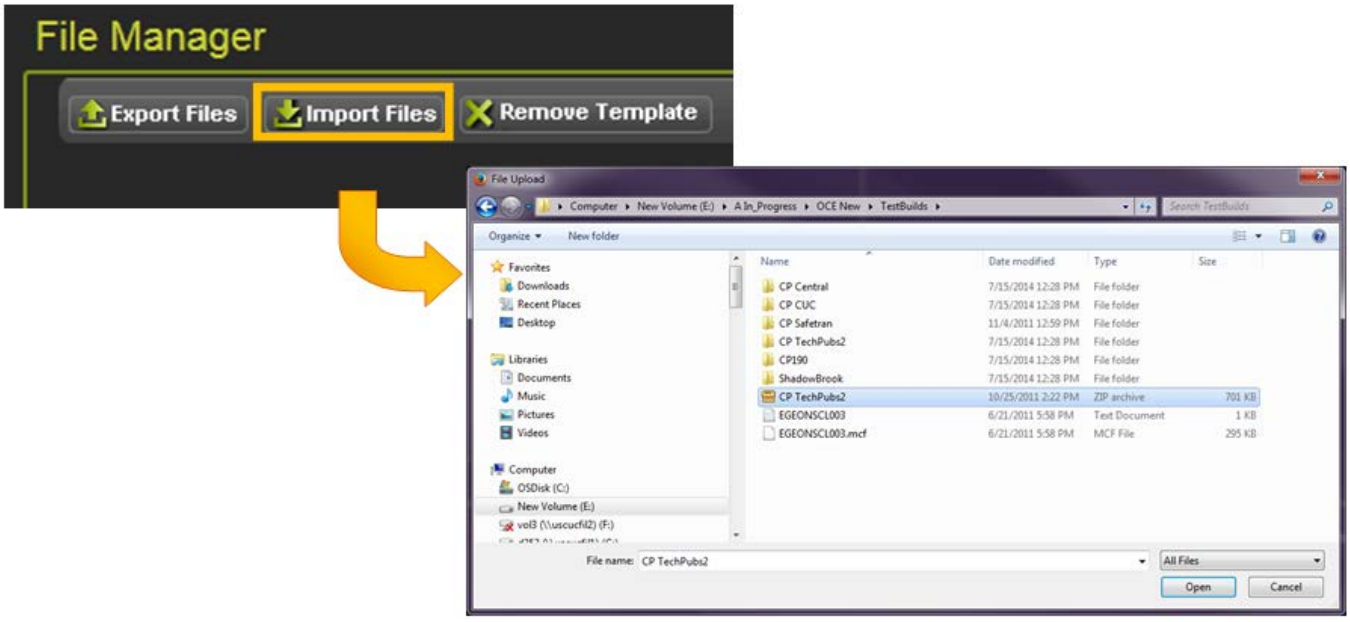

Figure 6-6 Importing Files

6.1.2.3 Remove Template Function

The **Remove Template** function will remove any created templates saved in the OCE repository. A highlighted menu indicates a template has been created for that type of site. To remove a created template, click on the site-type the template was created for. A confirmation pop-up will appear verifying the template is to be removed: click **OK**. A confirmation text will appear verifying the template was removed.

Figure 6-7 Remove a Template

CAUTION

REMOVED TEMPLATES CANNOT BE RECOVERED. ENSURE REMOVAL OF A TEMPLATE WILL NOT IMPACT CURRENT OR FUTURE BUILDS.

6.1.3 GCP Build Settings

The GCP Build Settings screen is used to set the Output Build path (shown in the green box below). This is the path where the output files (ZIP file, PAC file, reports) will be stored when a GCP site is built. It is recommended to cut and paste the file path directly from the windows explorer window into this field, rather than typing the path out by hand.

The GCP Build Settings Screen is also used to select which report files are included in the installation ZIP file that is created when the GCP configuration is built.

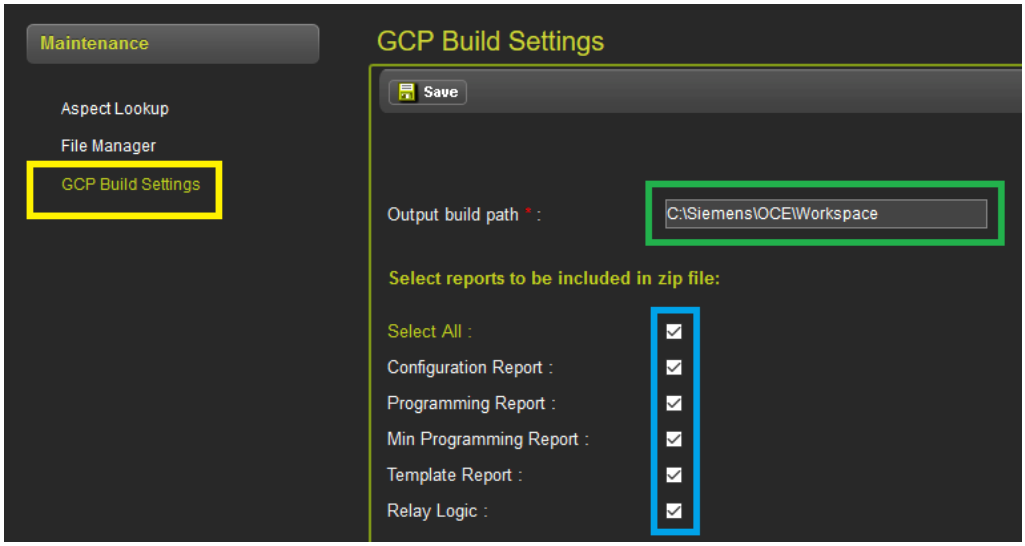

Figure 6-8 GCP Build Settings

6.1.4 PTC Class D Tests

For iVIU PTC GEO, iVIU, and WC CPU III site, the PTC Class D tests are configured using the Maintenance / PTC Class D Tests page. For VIU this information is under the Non-Vital Configuration / PTC menus.

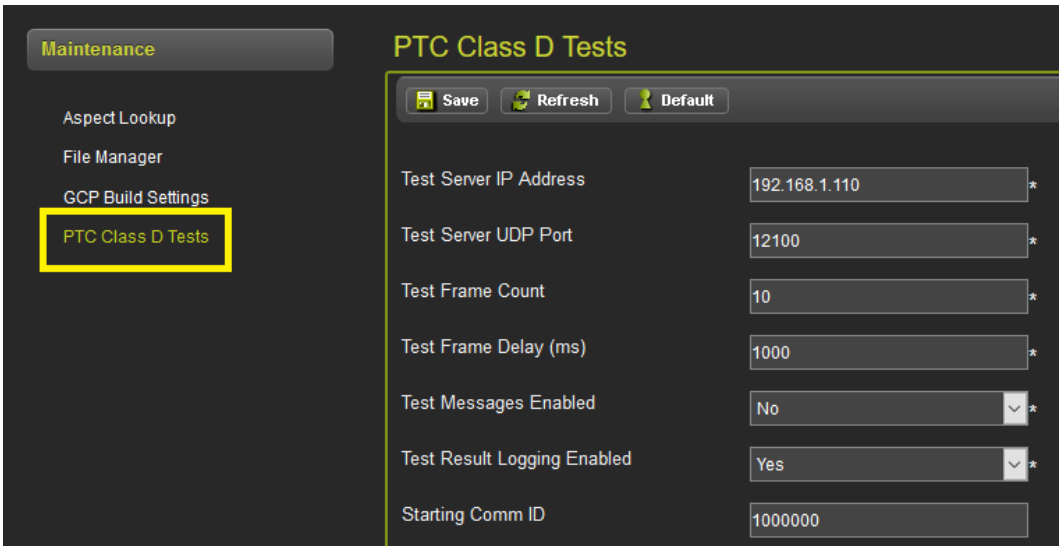

Figure 6-9 PTC Class D Tests

SECTION 7 SHUTDOWN OCE SERVER

7.0 SHUTDOWN OCE

7.1 LOGGING OUT

To log out of the OCE, simply click on the Logout button in the upper right corner as shown in the figure below. The OCE Welcome screen will appear when the logout is completed.

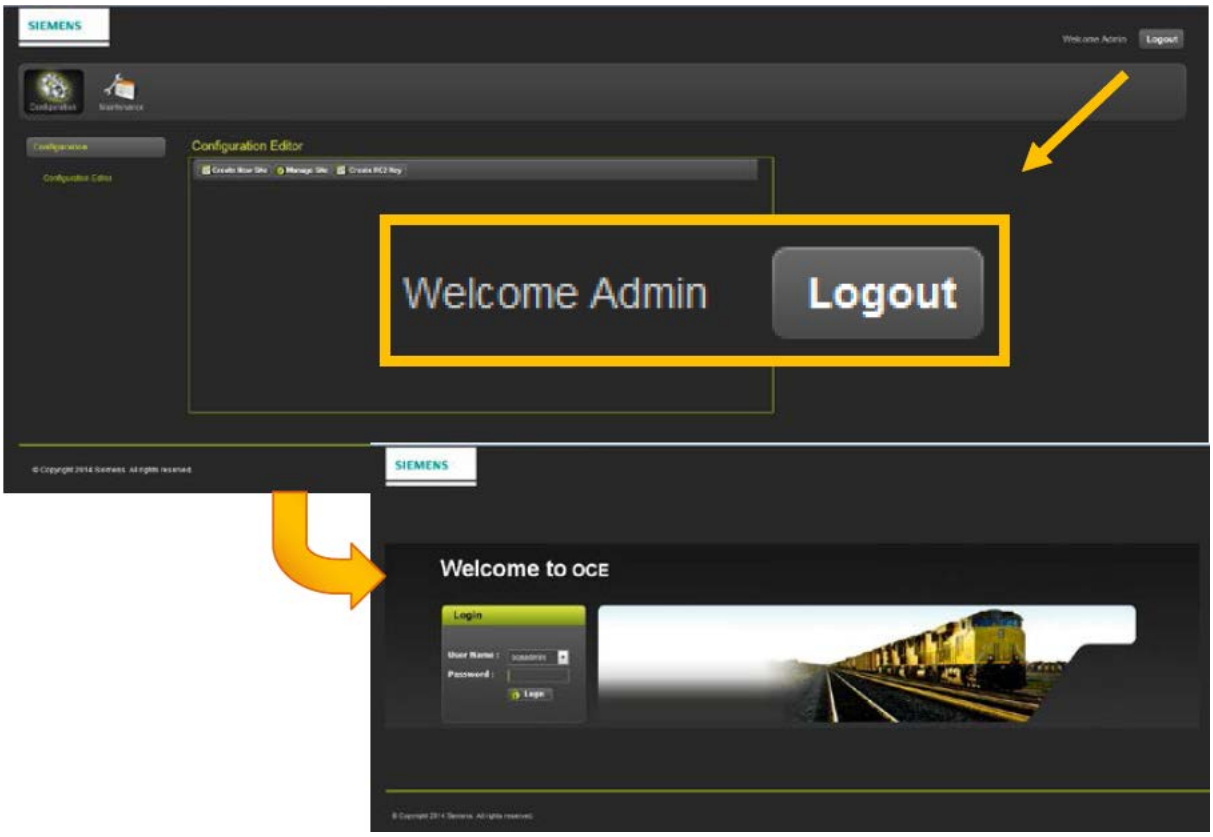

Figure 7-1 Logging Out of OCE

7.2 SHUTTING DOWN THE OCE SERVER

To shut down the OCE Server, which has been running in the background, maximize the DOS screen with the OCE Server information as shown in the figure below.

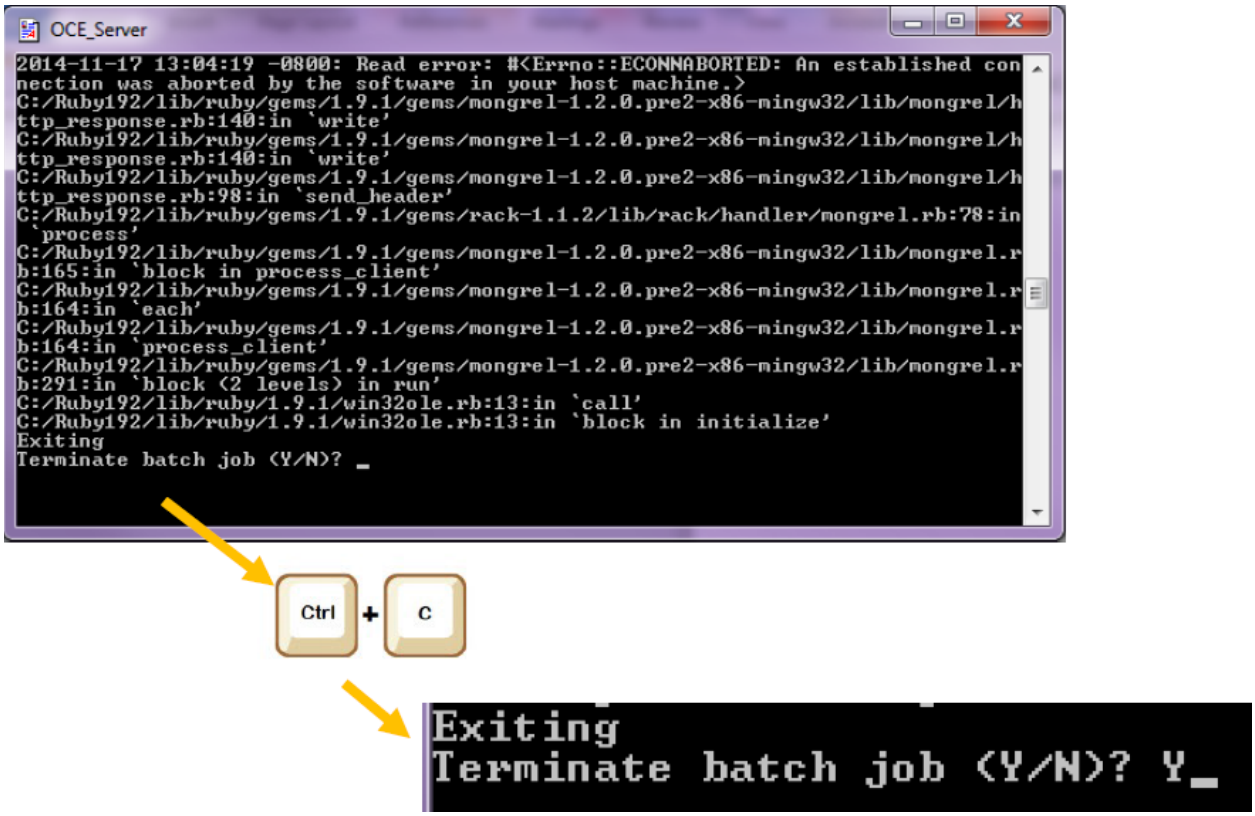

Figure 7-2 Shutting Down the OCE Server