

USER GUIDE

OFFICE CONFIGURATION EDITOR (OCE)

NOVEMBER 2014 (REVISED NOVEMBER 2018 & JUNE 2022)

DOCUMENT NO. SIG-00-11-15 VERSION B.3

Siemens Mobility, Inc. One Penn Plaza Suite 1100 New York, NY 10119-1101 1-800-793-SAFE www.usa.siemens.com/rail-manuals

Copyright © 2022 Siemens Mobility, Inc. All rights reserved

PROPRIETARY INFORMATION

The material contained herein constitutes proprietary and confidential information, and is the intellectual property of Siemens Mobility, Inc. (Siemens) protected under United States patent, copyright and/or other laws and international treaty provisions. This information and the software it describes are for authorized use only, and may not be: (i) modified, translated, reverse engineered, decompiled, disassembled or used to create derivative works; (ii) copied or reproduced for any reason other than specific application needs; or (iii) rented, leased, lent, sublicensed, distributed, remarketed, or in any way transferred; without the prior written authorization of Siemens. This proprietary notice and any other associated labels may not be removed.

TRANSLATIONS

The manuals and product information of Siemens Mobility, Inc. are intended to be produced and read in English. Any translation of the manuals and product information are unofficial and can be imprecise and inaccurate in whole or in part. Siemens Mobility, Inc. does not warrant the accuracy, reliability, or timeliness of any information contained in any translation of manual or product information from its original official released version in English and shall not be liable for any losses caused by such reliance on the accuracy, reliability, or timeliness of such information. Any person or entity that relies on translated information does so at his or her own risk.

WARRANTY INFORMATION

Siemens Mobility, Inc. warranty policy is as stated in the current Terms and Conditions of Sale document. Warranty adjustments will not be allowed for products or components which have been subjected to abuse, alteration, improper handling or installation, or which have not been operated in accordance with Seller's instructions. Alteration or removal of any serial number or identification mark voids the warranty.

SALES AND SERVICE LOCATIONS

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

SIEMENS MOBILITY, IN	С.	SIEMENS MOBILITY, INC.		
2400 NELSON MILLER	PARKWAY	939 S. MAIN STREET		
LOUISVILLE, KENTUCK	Y 40223	MARION, KENTUCKY 42064		
TELEPHONE:	(502) 618-8800	TELEPHONE:	(270) 918-7800	
FAX:	(502) 618-8810	CUSTOMER SERVICE:	(800) 626-2710	
SALES & SERVICE:	(800) 626-2710	TECHNICAL SUPPORT:	(800) 793-7233	
WEB SITE:	www.usa.siemens.com/rail-manuals	FAX:	(270) 918-7830	

FCC RULES COMPLIANCE

The equipment covered in this manual has been tested and found to comply with the limits for Class A digital devices, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

DOCUMENT HISTORY

Version	Release Date	Sections Changed	Details of Change
X.1	Jan 2010		Preliminary
А	Nov 2014	ALL	Initial Release OCE Version 1.9.5
В	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 GCP 3000+ as well as compatibility with Windows 10.
			Section 2.1 added compatibility with Windows 10.
			Section 4.5.1.3 GCP 3000+ 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.
B.3	Jun 2022	3.3.1	Added product selection section.
		4.0	Added updated site configuration editor information throughout.
		4.5.7	Added configuration section.
		All	Performed general formatting throughout.

Table of Contents

PROPRIETA	RY INFORMATION	ii
DOCUMENT	HISTORY	iii
NOTES, CAU	JTIONS, AND WARNINGS	xv
ELECTROS	TATIC DISCHARGE (ESD) PRECAUTIONS	xvi
GLOSSARY		xvii
SECTION 1	General Description	1-1
1.1 INT	RODUCTION	1-1
SECTION 2	Software Installation	2-1
2.1 Pre	requisite installation	2-1
2.2 OC	E Installation	2-1
SECTION 3	Operation	3-1
3.1 Sta	ting the OCE	3-1
3.2 Initi	al OCE Setup	
3.2.1	OCE Setup for iVIU PTC GEO	3-2
3.2.2	OCE Setup for GCP	3-5
3.2.3	Replicating an OCE Installation	3-6
3.2.4	Using Templates	3-7
3.2.5	OCE File Structure	3-10
3.3 Cor	figuration Editor	3-11
3.3.1	Select Product	3-11
3.3.2	Create New Site	3-12
3.3.3	Manage Site	3-12
3.3.4	Create an RC2Key File	3-15
3.3.5	Non-Vital Configuration	3-17
3.3.6	Vital Configuration	
SECTION 4	Creating Product-Specific Configurations	4-1
4.1 iVIU	J PTC GEO Sites	4-1
4.1.1	Vital Configuration	4-5
4.1.2	Non-Vital Configuration	4-12
4.1.3	Building Configuration Files	4-19
4.2 iVIL	J Sites	4-20
4.2.1	Vital Configuration	4-23
4.2.2	Non-Vital Configuration	4-25

4.2	.3	Building Configuration Files	4-27
4.3	VIU	Sites	4-29
4.3	.1	Vital Configuration	4-31
4.3	.2	Non-Vital Configuration	4-37
4.3	.3	Building Configuration Files	4-50
4.4	GEO	D Sites	4-52
4.5	GCI	⊃ Sites	4-56
4.5	.1	Creating a New Site from MCF	4-57
4.5	.2	Creating a Site from a PAC File / Modifying Existing PAC File	4-81
4.5	.3	Creating Templates	4-86
4.5	.4	Using a Template	4-90
4.5	.5	Updating a Site to use a new MCF	4-91
4.5	.6	Comparing PAC/ZIP files	4-93
4.5	.7	Configuration	4-97
4.6	Way	/ConneX Sites	4-135
4.6	.1	Vital Configuration	4-136
4.6	.2	Non-Vital Configuration	4-138
4.6	.3	Build Configuration Files	4-143
SECTIC	DN 5	Non-Vital Configuration	5-1
5.1	CDL		5-1
5.2	iVIU	PTC GEO/iVIU/WC-CPU III PTC Menu	5-5
5.2	.1	PTC – General	5-6
5.2	.2	PTC – WIU	5-7
5.2	.3	PTC – EMP	5-8
SECTIC	DN 6	Maintenance	6-1
6.1	Mai	ntenance	6-1
6.1	.1	Aspect Lookup	6-2
6.1	.2	Files Manager	6-3
6.1	.3	GCP Build Settings	6-6
6.1	.4	PTC Class D Tests	6-6
SECTIC)N 7	Shutdown OCE Server	7-1
7.1	Log	ging Out	7-1
7.2	Shu	tting Down the OCE Server	7-2

List of Figures

Figure 2-1	OCE Setup Wizard	2-1
Figure 2-2	OCE License Agreement	2-2
Figure 2-3	Begin Installation	2-3
Figure 2-4	OCE File Installation	2-3
Figure 2-5	Finish OCE Installation	2-4
Figure 3-1	Desktop Icon	3-1
Figure 3-2	Mongrel Server Boot up	3-1
Figure 3-3	OCE URL	3-1
Figure 3-4	Login Page	3-2
Figure 3-5	Selecting to Import PTC Database and MCF	3-3
Figure 3-6	Importing PTC Database and MCF	3-3
Figure 3-7	Aspect Lookup	3-4
Figure 3-8	GCP Build Settings	3-5
Figure 3-9	File Manager Export	3-6
Figure 3-10	File Manager Import	3-6
Figure 3-11	Manage Site - Creating a Template	3-7
Figure 3-12	New iVIU Site Using a Template	3-8
Figure 3-13	Set Template	3-8
Figure 3-14	Removing a Template	3-9
Figure 3-15	Configuration Editor Opening Screen	3-11
Figure 3-16	Manage Site 'Open' Menu	3-13
Figure 3-17	Manage Site 'Save As' Menu	3-13
Figure 3-18	Manage Site 'Export' Menu	3-14
Figure 3-19	Manage Site 'Import' Menu	3-14
Figure 3-20	Manage Site 'Remove' Menu	3-15
Figure 3-21	Create RC2Key	3-15
Figure 3-22	Creating an RC2Key	3-16
Figure 3-23	RC2Key CRC	3-16
Figure 3-24	RC2Key.bin CRC	3-17
Figure 3-25	Non-Vital Configuration Menu	3-17
Figure 3-26	Example Non-Vital Configuration Menu	3-18
Figure 3-27	Basic Control Buttons	3-19
Figure 3-28	Basic Alert	3-19

Figure 3-29	Data Entry Warning Messages	3-19
Figure 3-30	Set to Default	3-20
Figure 3-31	Vital Configuration Menus	3-20
Figure 3-32	Vital Configuration Symbols	3-21
Figure 3-33	Vital Set to Defaults	3-21
Figure 4-1 C	Create iVIU PTC GEO Site	4-1
Figure 4-2 i	VIU PTC GEO Site Configuration Editor	4-2
Figure 4-3 i	VIU PTC GEO Site Select GEO Installation	4-3
Figure 4-4 i	VIU PTC GEO Appliance vs Non-Appliance	4-3
Figure 4-5 i	VIU PTC GEO Select MCF	4-4
Figure 4-6 i	VIU PTC GEO Appliance versus Non-Appliance	4-4
Figure 4-7 N	ACF CRC	4-4
Figure 4-8 V	/ital Configuration Menu	4-5
Figure 4-9 S	Signal Object Configuration Menus Non-Appliance Model GEO	4-6
Figure 4-10	Parameters: Do Not Change	4-7
Figure 4-11	Switch Object Configuration Menus Non-Appliance Model GEO	4-7
Figure 4-12	SigAspects Configuration Menu Appliance Model GEO	4-8
Figure 4-13	Signal Configuration Menu Appliance Model GEO	4-9
Figure 4-14	Switch Configuration Menu Appliance Model GEO	4-9
Figure 4-15	Block Fault Configuration Menu Appliance Model GEO	4-10
Figure 4-16	Physical Configuration Menus	4-11
Figure 4-17	Vital Site Configuration Menu	4-12
Figure 4-18	Non-Vital Site Configuration Menu	4-13
Figure 4-19	Non-Vital: Application Menu	4-14
Figure 4-20	Non-Vital: PTC Menu	4-15
Figure 4-21	Non-Vital: Console Menu	4-15
Figure 4-22	Non-Vital: Setting Serial Protocol	4-16
Figure 4-23	Setting the GEO UCN	4-17
Figure 4-24	Setting the GEO Connection Type	4-17
Figure 4-25	Non-Vital: External Networking/SNMP Menu	4-18
Figure 4-26	Non-Vital: Log Setup	4-18
Figure 4-27	Build Config Files	4-19
Figure 4-28	Config Reports Button	4-19
Figure 4-29	UCN/PTC UCN in Configuration Report	4-20
Figure 4-30	Creating a New iVIU Site	4-20

vii

Figure 4-31	iVIU Site Name	4-21
Figure 4-32	iVIU Select MCF	4-21
Figure 4-33	iVIU Enter MCF CRC	4-22
Figure 4-34	Ready for Configuration of iVIU	4-22
Figure 4-35	iVIU Setting Physical Layout	4-23
Figure 4-36	iVIU Object Configuration	4-24
Figure 4-37	iVIU Module/Slot 1 Configuration	4-24
Figure 4-38	Non-Vital: iVIU Site Configuration Menu	4-25
Figure 4-39	Non-Vital: Application Menu	4-26
Figure 4-40	Build Config Files	4-27
Figure 4-41	Config Reports button	4-27
Figure 4-42	UCN/PTC UCN in Configuration Report	4-28
Figure 4-43	Creating a VIU Site	4-29
Figure 4-44	VIU Editor Window	4-30
Figure 4-45	iVIU Select MCF	4-30
Figure 4-46	iVIU Enter MCF CRC	4-31
Figure 4-47	VIU Configuration	4-31
Figure 4-48	VIU Physical Configuration Selection	4-32
Figure 4-49	VIU Setting PTC Item Count	4-33
Figure 4-50	VIU Setting PTC Message Layout	4-33
Figure 4-51	VIU Setting PTC Order	4-34
Figure 4-52	VIU WIU Channel Configuration	4-34
Figure 4-53	VIU Connection Configuration	4-35
Figure 4-54	VIU20e Object Configuration	4-36
Figure 4-55	VIU20e ACSES Configuration	4-36
Figure 4-56	VIU20e ACSES Railroad Line Number	4-37
Figure 4-57	VIU20e Non-Vital Configuration	4-37
Figure 4-58	VIU Non-Vital Site Configuration	4-38
Figure 4-59	VIU Non-Vital PTC Configuration	4-39
Figure 4-60	PTC Configuration – General Parameters	4-39
Figure 4-61	PTC Configuration – WIU Configuration	4-40
Figure 4-62	PTC Configuration – WIU Configuration EMP Parameters	4-40
Figure 4-63	PTC Configuration - WIU Configuration Class D Parameters	4-41
Figure 4-64	PTC Configuration - Time Source	4-42
Figure 4-65	PTC Configuration - High Availability	4-43

viii

Figure 4-66	PTC Configuration - Class D Tests	4-43
Figure 4-67	PTC Configuration - Device Attribute	4-44
Figure 4-68	PTC Configuration - Message Layout	4-45
Figure 4-69	Non-Vital Configuration - Ethernet	4-46
Figure 4-70	Non-Vital Configuration - Event Log	4-46
Figure 4-71	Non-Vital Configuration – GPS	4-47
Figure 4-72	Non-Vital Configuration - Serial Port	4-48
Figure 4-73	Non-Vital Configuration – SNMP	4-48
Figure 4-74	Non-Vital Configuration – SNTP	4-49
Figure 4-75	Non-Vital Configuration - TCP	4-49
Figure 4-76	Build Config Files	4-50
Figure 4-77	Config Reports Button	4-50
Figure 4-78	UCN/PTC UCN in Configuration Report	4-51
Figure 4-79	Creating a GEO Site	4-52
Figure 4-80	GEO Site Configuration Editor	4-53
Figure 4-81	Selecting MCF	4-53
Figure 4-82	GEO Physical Configuration Selection	4-54
Figure 4-83	GEO Vital Configuration Menu	4-54
Figure 4-84	GEO Config Report	4-55
Figure 4-85	GEO Config Report UCN	4-55
Figure 4-86	Creating a GCP Site	4-57
Figure 4-87	GCP Editor Window	4-57
Figure 4-88	Create GCP Site Window	4-58
Figure 4-89	Create GCP from PAC File	4-58
Figure 4-90	Select GCP MCF	4-59
Figure 4-91	GCP MCF Selected	4-59
Figure 4-92	GCP Configuration Editor	4-60
Figure 4-93	GCP 4000: GCP Programming	4-61
Figure 4-94	GCP 4000: Template Change Warning	4-61
Figure 4-95	Template Parameters	4-62
Figure 4-96	GCP 4000: Site Programming	4-63
Figure 4-97	GCP 4000: ATCS Address	4-63
Figure 4-98	GCP 4000: Location Information	4-63
Figure 4-99	GCP 5000 Site Configuration	4-64
Figure 4-100	GCP MCF Template Selection	4-65

Figure 4-101	GCP Programming Menus	4-66
Figure 4-102	GCP Programming Hidden Parameters	4-66
Figure 4-103	Invalid Setting	4-67
Figure 4-104	SEAR CDL Selection	4-67
Figure 4-105	SEAR Digital Inputs	4-68
Figure 4-106	SEAR Digital Inputs	4-68
Figure 4-107	Display Programming	4-69
Figure 4-108	GCP 3000+ Site Configuration	4-70
Figure 4-109	GCP 3000+ Programming	4-71
Figure 4-110	GCP 3000+ Display Settings: Laptop	4-71
Figure 4-111	GCP 3000+ Display Settings: Security	4-72
Figure 4-112	GCP 5000 (GCE) Site Configuration	4-73
Figure 4-113	GCP Programming Menus for GCE Application	4-74
Figure 4-114	GCP Programming Hidden Parameters	4-74
Figure 4-115	Example of an Invalid Setting	4-75
Figure 4-116	SEAR CDL Selection	4-75
Figure 4-117	SEAR Digital Inputs Screen	4-76
Figure 4-118	SEAR Digital Inputs Screen - Example	4-76
Figure 4-119	Display Programming	4-77
Figure 4-120	Build Config Files	4-78
Figure 4-121	Hidden Parameter Default Warning	4-78
Figure 4-122	Naming the PAC file	4-79
Figure 4-123	GCP Build Outputs	4-80
Figure 4-124	Import PAC File	4-81
Figure 4-125	Select PAC or ZIP to Import	4-81
Figure 4-126	Show Report	4-82
Figure 4-127	Creating a GCP Site	4-82
Figure 4-128	GCP Editor Window	4-83
Figure 4-129	Create GCP Site Window	4-83
Figure 4-130	PAC File Selection	4-84
Figure 4-131	Change MCF	4-84
Figure 4-132	Import Report Location	4-85
Figure 4-133	Import Report	4-85
Figure 4-134	PAC File loaded	4-86
Figure 4-135	Selecting MCF for Template	4-87

Figure 4-136	Enable all Tracks and Predictors	4-87
Figure 4-137	Enable all Tracks and Predictors	4-88
Figure 4-138	Changing Default Values for Template	4-88
Figure 4-139	Build Config Files	4-89
Figure 4-140	Set Template Name	4-90
Figure 4-141	Select Template to Use	4-90
Figure 4-142	TEMPLATE: Selection Screen	4-91
Figure 4-143	Upgrade MCF Button	4-92
Figure 4-144	Upgrade MCF Menu	4-92
Figure 4-145	Compare PAC Files	4-93
Figure 4-146	Compare two PAC Files	4-93
Figure 4-147	Comparison of two Identical PAC Files	4-94
Figure 4-148	Comparison of Non-Identical PAC Files	4-94
Figure 4-149	Download Comparison Report	4-95
Figure 4-150	Comparison between PAC Files Using Different MCFS	4-95
Figure 4-151	Comparison between ZIP and PAC Files	4-96
Figure 4-152	Comparison between ZIP and PAC Files	4-96
Figure 4-153	Configuration Menus for GCP 4000, 3000+, 5000 & GCE	4-97
Figure 4-154	SEAR Programming menus for GCP 5000 and GCE	4-98
Figure 4-155	SEAR CDL Selection	4-98
Figure 4-156	SEAR CDL Questions	4-99
Figure 4-157	SEAR CDL Compile Message	4-99
Figure 4-158	SEAR CDL Compile Complete	4-100
Figure 4-159	Digital Input Menu	4-101
Figure 4-160	Digital Input Menu showing Template Options	4-102
Figure 4-161	Digital Input Menu Discrete Options	4-103
Figure 4-162	Digital Input DI1(J3)	4-104
Figure 4-163	Analog Input Menu	4-107
Figure 4-164	Non Vital Outputs Menu	4-109
Figure 4-165	Echelon Modules: Type GCP 5000	4-111
Figure 4-166	Echelon Modules: Type iLOD	4-112
Figure 4-167	Echelon Modules: Type SSCC	4-113
Figure 4-168	Echelon Modules: Type VHFC	4-115
Figure 4-169	Echelon Modules: Type WAG	4-117
Figure 4-170	Echelon Modules: Type MCM	4-117

Figure 4-171	Communications Settings Screen	4-118
Figure 4-172	SEAR Communications: Node	4-120
Figure 4-173	SEAR Communications: Collector	4-121
Figure 4-174	Serial Ports: AUX port	4-123
Figure 4-175	Connectivity Menu	4-124
Figure 4-176	Display Programming Menu	4-125
Figure 4-177	Display Programming Serial Port	4-126
Figure 4-178	Display Programming Laptop Ethernet Port	4-127
Figure 4-179	Display Programming Port 1 Ethernet Port	4-127
Figure 4-180	Display Programming Port 2 Ethernet Port	4-128
Figure 4-181	Display Programming DNS	4-128
Figure 4-182	Display Programming Router Settings	4-129
Figure 4-183	Display Programming Consolidated Logging	4-130
Figure 4-184	Display Programming Diagnostic Logging	4-131
Figure 4-185	Display Programming Log Verbosity Settings	4-132
Figure 4-186	Display Programming Security	4-133
Figure 4-187	Display Programming Web Server	4-133
Figure 4-188	Display Programming Display Options	4-134
Figure 4-189	WayConneX Site	4-135
Figure 4-190	Select WayConneX MCF	4-135
Figure 4-191	Configuration Menu	4-136
Figure 4-192	Timers Menu	4-137
Figure 4-193	WayConneX Vital Configuration Menu	4-137
Figure 4-194	Non-Vital: WC Site Configuration Menu	4-138
Figure 4-195	Non-Vital: WayConneX Application Menu	4-139
Figure 4-196	Non-Vital: WayConneX PTC Menu	4-140
Figure 4-197	Non-Vital: WayConneX Communication Menu	4-141
Figure 4-198	Non-Vital: WayConneX Log Setup Menu	4-141
Figure 4-199	Non-Vital: WayConneX Security Menu	4-142
Figure 4-200	Non-Vital: WayConneX Maintainer On Site Menu	4-142
Figure 4-201	Build Config Files	4-143
Figure 4-202	Config Reports Button	4-144
Figure 4-203	UCN/PTC UCN in Configuration Report	4-144
Figure 5-1 C	DL Menu	5-1
Figure 5-2 U	pload CDL	5-1

xii

Figure 5-3	Browse for CDL	5-2
Figure 5-4	Update CDL	5-2
Figure 5-5	Start CDL	5-2
Figure 5-6	CDL Questions	5-3
Figure 5-7	Compile CDL Message	5-3
Figure 5-8	Display Q&A	5-4
Figure 5-9	CDL Operational Parameters	5-4
Figure 5-10	Non-Vital Configuration - PTC Menu	5-5
Figure 5-11	PTC Configuration - General Parameters or iVIU PTC GEO	5-7
Figure 5-12	PTC Configuration - WIU Parameters	5-7
Figure 5-13	PTC Configuration - EMP Parameters	5-8
Figure 5-14	PTC Configuration - Class C&D Messages Parameters	5-9
Figure 5-15	PTC Configuration - Class C&D Messages Parameters Continued	5-9
Figure 5-16	PTC Configuration - Beacon Message	5-10
Figure 5-17	PTC Configuration - Time Source Parameters	5-10
Figure 5-18	PTC Configuration - Preferred Time Source Parameters	5-11
Figure 5-19	PTC Configuration - High Availability	5-12
Figure 5-20	PTC Configuration - Device Attributes	5-13
Figure 5-21	PTC Configuration - Device Attributes Aspects	5-14
Figure 5-22	PTC Configuration - Message Layout Rearrange Positions	5-15
Figure 6-1	Maintenance Menu	6-1
Figure 6-2	Aspect Lookup Tables and PTC Aspect Values Selection	6-2
Figure 6-3	Selecting Aspect Lookup and PTC Aspect Value File Selection	6-2
Figure 6-4	File Manager	6-3
Figure 6-5	Export Files	6-3
Figure 6-6	Importing Files	6-4
Figure 6-7	Remove a Template	6-5
Figure 6-8	GCP Build Settings	6-6
Figure 6-9	PTC Class D Tests	6-6
Figure 7-1	Logging Out of OCE	7-1
Figure 7-2	Shutting Down the OCE Server	7-2

List of Tables

Table 4-1	Battery Input Settings	4-108
Table 4-2	Relay Output Settings	4-110
Table 4-3	Echelon Modules: Type VHFC Settings	4-116
Table 4-4	Communications Settings	4-118
Table 4-5	Node Settings	4-119
Table 4-6	Collector Site Settings	4-121
Table 4-7	Bullhorn/Modbus Settings	4-122
Table 4-8	Serial Port Settings	4-123

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:



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 electrostaticsensitive 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
ВСР	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	<u>Control Descriptor Language</u> – 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	<u>Color Light Signal</u> – 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.

xvii

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.
СТС	<u>Centralized Traffic Control</u> –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	<u>Department of Transportation</u> crossing inventory number assigned to every highway-railroad crossing in the United States. 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 nonvolatile 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** <u>Federal Railroad Administration</u> 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** <u>Grade Crossing Predictor</u> A train detection device used as part of a highway-railroad grade crossing warning system to provide a relatively uniform warning time.
- GEO® <u>Geographic Signaling System</u> GEO® is a vital microprocessor controlled
- GENI (F) Genisys Field Protocol
- GENI (O) Genisys Office Protocol
- **GFT** <u>Ground Fault Tester</u> 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 <u>Geographic Object Library</u>
- GPS Global Positioning System

TERM	DESCRIPTION
НМАС	<u>Keyed-Hash Message Authentication Code</u> – 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:	<u>Light Out Detector</u> - 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:	<u>Module Configuration File</u> – 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	<u>Network Time Protocol</u> – 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.
RailFusion	An office based application that communicates with and receives data from specially equipped crossings.
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.

TERM	DESCRIPTION
RTU:	Remote Telemetry Unit
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:	<u>Transmission Control Protocol / Internet Protocol</u> -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:	<u>Track</u> – 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: <u>Unique Check Number</u> – 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. **Coordinated Universal Time** UTC: VHF Communications device used for remote operations and calibration as well **Communicator:** 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 - refer to RailFusion definition.

xxiii

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.

SECTION 1 GENERAL DESCRIPTION

1.0 GENERAL DESCRIPTION

1.1 INTRODUCTION

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
- GCP 4000
- GCP 5000
- GCP 3000+
- SGCP 4000/MS 4000

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 PTCenable 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).

1-1

This page intentionally left blank

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 20.10.2
- Google Chrome

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:

setup.exe

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.

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.

Office Configuration Editor
Ready to Install the Program The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield

Figure 2-3 Begin Installation

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



Figure 2-4 OCE File Installation

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



Figure 2-5 Finish OCE Installation

2-4



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

 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

3-1

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

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 in the following figure.

Configuration Maintenance	Tools
Maintenance	File Manager
Aspect Lookup	Export Files
File Manager	🕘 File Upload
GCP Build Settings	\leftarrow \rightarrow \checkmark \uparrow \square \Rightarrow This PC \Rightarrow Documents \Rightarrow work \Rightarrow oc
	Organize 👻 New folder
	ecd ^ Name
	gcp3000
	gcp5000
	acs

Figure 3-5 Selecting to Import PTC Database and MCF

The OCE will indicate which of the files are imported successfully, (as shown in the following figure). 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.

📩 Export Files 🔀 Import Files 🔀 Remov	e Template		
File		Status	
AspectLookupTable.ns.1.txt	Imported		
iNSPTCDB001.db	Imported		
iNSPTCGEO003.log	Imported		
iNSPTCGE0003.mcf	Imported		
iNSPTCNAG002.log	Imported		
iNSPTCNAG002.mcf	Imported		
PTCAspectValues.NS.1.txt	Imported		

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.

Configuration Maintenance	pols
Maintenance	Aspect Lookup
Aspect Lookup	Select aspect lookup file :
File Manager	Select PTC aspect values file :
GCP Build Settings	PTCAspectValues.NS.1.txt

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 in the figure 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
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 in the following figure, 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.

Maintenance	File Manager	
Aspect Lookup	Export Files Monort Files Remove Template	
File Manager GCP Build Settings	Opening oceconfig_files_07-10-2017_152502.zip	×
	You have chosen to open: cccconfig_files_07-10-2017_152502.zip which is: Compressed (zipped) Folder (9.6 MB) from: http://localhost:9090 What should Firefox do with this file?	
	Open with Windows Explorer (default) Save File	Cancel

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.

File Manager		
Export Files Remove Template		
File	Status	Check All
basic-4k-mcf-02-8.TPL	Imported	
mcf.db	Imported	
nvconfig.sql3	Imported	
rt.db	Imported	
mcf.db	Imported	
nvconfig.sql3	Imported	
rt.db	Imported	
temp1.TPL	Imported	
AspectLookupTable.CSX.1.txt	File already exists	✓Override?

Figure 3-10 File Manager Import

3-6
NOTE

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

For sites other than the GCP 3000+, GCP 4000, GCP 5000, and GCE, 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 uploadable, 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 following figure.

Ereate New Site	😵 Manage Site 🔒 Save 📑	Create RC2 Key
Туре	iVIU	
Name	New_iVIU_Site	
iVIU MCF		Ma Select MCF
MCF CRC		

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 in the following figure) to save it.

Configuration Editor			
Create New Site	😵 Manage Site) 🙀 Build Config Files 🗐 Create RC2 Key		
	Open		
	Close		
	Save As		
Туре	Export		
	Import		
Name	Bernaus		
	Set Template		
MCF CRC	88F85636		

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 in the following figure.

SIEMENS Configuration	
Maintenance Aspect Lookup File Manager PTC Class D Tests	File Manager Export Files Import Files Remove Template IVIU PTC GEO IVIU VIU VIU CPU-III CPU-III
	Current iVIU Non Vital configuration template will be delete. Do you want to continue?
	File Manager Export Files Import Files Remove Template iVIU Template removed successfully.

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 four choices listed: Select Product, Create New Site, Manage Site, and Create RC2Key.

SIEMENS		Welcome Admin Logout
Configuration Maintenance	Tools	
Configuration Configuration Editor	Configuration Editor Select Product Create New Site Manage Site Save Type ocp Template Name	
	GCP MCF MCF CRC Comments Select Product V Create New Site Manage Site Build Config Files Create	ate RC2 Key

Figure 3-15 Configuration Editor Opening Screen

3.3.1 Select Product

The following selections are available:

GCP 🗸
Select Product
IVIU PTC GEO
iVIU
VIU
GEO
GCP
WC CPU3

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

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

NOTE

GCP is used to create the configuration for GCP 4000, GCP 5000, GCP 3000+, or SGCP 4000/MS 4000 locations.

WC CPU3 is used to create MCF configurations for WayConneX CPU III based applications.

Select the required product from here. The OCE will retain this setting, and it is used to customize the other menus so that only applicable options for the product are shown. The user can change the product selection, as necessary.

3.3.2 Create New Site

Create New Site is the starting point of creating a brand new installation. When the user presses Create New Site, the site Type is automatically populated with the Product Type selected. The last used MCF for the specific product is also populated. Thus, for example, if the user has an approved GCP MCF that was used for their last project, the new project will default to the same MCF. If a different MCF is required, press the Select MCF button to change it.

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

3.3.3 Manage Site

Manage Site is used to perform operations on a previously created site. Manage Site has the following options:

- Open
- Close
- Save As
- Export
- Import
- Remove
- Set Template (not visible in GCP and GEO)

Open is used to open a site that has previously been created. The Product type is automatically set based upon the type that was chosen previously, but may be changed here if necessary.

📑 Create New Site 🔗 Manage Site 📮 Save 🔳 Create RC2 Key					
Ope	n				
Clos	ie				
Save	As				
Type	ort yanan and an and an				
Imp	ort				
Name Ren	iove Select Product :				
WILL MCE	GEO				
	Select Site :				
MCF CRC	cneos 🗸				
	cneos				
	newgeo				
	nseos				
	ros1				
	roskinnw				
	test				

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.

Create New Site Manage Site Build Config Files Create RC2 Key Open Close Save As Type Export Save As Site Import Name Remove GEO MCF CNRGEOS_TE MCF CRC FA8B6139 Ok Cancel	Configuration Editor				
Close Save As Type Export Save As Site Import Name Remove GEO MCF CNRGEOS_TE Save as site name : New_Site New_Site Ok Cancel	🗐 Create New Site	⊘ Manage Site			
Save As Type Export Save As Site Import Name Remove GEO MCF CNRGEOS_TE MCF CRC FA8B6139 Ok		Close			
Type Export Save As Site Import Name Remove GEO MCF CNRGEOS_TE Save as site name : MCF CRC FA8B6139 Ok Cancel		Save As			
Name Remove GEO MCF CNRGEOS_TE MCF CRC FA8B6139 Ok Cancel	Туре	Export Save As Site			
GEO MCF CNRGEOS_TE Save as site name : MCF CRC FA8B6139 Ok Cancel	Name	Remove			
MCF CRC FA8B6139 Ok Cancel	GEO MCF	CNRGEOS_TE Save as site name :			
	MCF CRC	FA8B6139 Ok Cancel			

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 it 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 is 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.

Configuration Editor				
Create New Site	📀 Manage Site 🗮 Build Config Files 🎊 Config Report			
	Open			
	Close			
	Save As			
Туре	Export Template			
	Export HD MCFs			
Name	Import 7May12			
GCP MCF	Remove			
MCF CRC	494D2656 Do you want to remove current site?			
Comments				
	OK Cancel			

Figure 3-20 Manage Site 'Remove' Menu

3.3.4 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.

Configuration Maintenance	Tools
Configuration	Configuration Editor
Configuration Editor	🗐 Create New Site 🔗 Manage Site 🗐 Create RC2 Key

Figure 3-21 Create RC2Key

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

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

Create RC2Key File	x
Enter RC2Key Value:	\bigcirc
••••	
Confirm RC2Key Value:	
••••	
Note: To load RC2key onto the iVIU, put th into the following folder: \safetran\iviu For other products use the WebUI to RC2Key.bin file.	e RC2key.bin file configuration. upload the
Create 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.

Enter RC2Key Value:
Confirm RC2Key Value:
RC2 key file crc: D689DECC
Successfully created rc2key.bin Note: To load RC2key onto the iVIU, put the RC2key.bin file into the following folder: \safetran\iviu\configuration. For other products use the WebUI to upload the RC2Key.bin file.
Download 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

3.3.5 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.

Configuration	Tools	
Configuration	Configuration E	ditor
Configuration Editor	📑 Create New Site (🥹 Manage Site 👯 Build Config Files 📑 Cro
Non-Vital Configuration Vital Configuration		
2	Туре	IVIU PTC GEO
	Name	CSX
	Master DB	iCSXPTCDB003.db
	GEO Installation	CSXEOSx66002
	iVIU MCF	iCSXPTCNAG003.mcf
	MCF CRC	81C99156

Figure 3-25 Non-Vital Configuration Menu

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

OPERATION

Site Configuration	General
🔚 Save 🏾 🦉 Refresh 🔃 Default	🕞 Save 🦉 Refresh 💽 Default
Site Name csx	PTC Enable GEOs 🕹 Yes 🗸
DOT Number 00000A	Console as NV Logic Ctrlr
Mile Post 100.00000000011	Log GEO Events No
Time Zone Eastern (GMT-5:00)	Sync GEO and SEAR Clocks
ATCS Address 7.620.100.100.01	WIU Channel Enabled
	Send Msg on Change of State
	Msg Timeout (Minutes)
	Msg Update Rate (ms)

Figure 3-26 Example Non-Vital Configuration Menu

SAFE

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.

PTC

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 (as shown in the following figure). The OCE does not ask for confirmation for this action.

Site Configuration		
🔚 Save 🥳 Refresh 🔀 Default		
01- N		
Site Name	WalkThrough	
DOT Number	00000\$0A	Must contain only letters, numbers, "-" and "_"
Mile Post	000.053244444444444444444	Length should be in the range of (0 to 20)
Time Zone	Eastern (GMT-5:00)	*
ATCS Address	7.620.100.100.01	*

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.

Configuration	_Set to Default
Configuration Editor	Default
 Non-Vital Configuration 	
Site Configuration	
Applications	
▶ PTC	Defaults 🛛 🔀
Console	Are you sure you want to
▶ Modules	set non-vital parameters to defaults?
 ExternalNetworking 	
Log Setup	Yes No
Set to Default	
 Vital Configuration 	

Figure 3-30 Set to Default

3.3.6 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

Configuration		Configuration Editor				
Configuration Editor		Create New Site	@	Manage Site	🗱 Build Config Files	📑 Create RC2 Key
 Vital Configuration 	_					
 LOGICAL configuration 		-		050		1
 OBJECT configuration 		Туре		GEO		
OTHER configuration		Name		cneos		
Set to Defaults						1
PHYSICAL configuration		GEO MCF		CNRGEOS_	_TEST002.mcf	
 SITE configuration 		MCF CRC		FA8B6139		
Unique Check Number (UCN)						

Figure 3-31 Vital Configuration Menus

3-20

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 in the following figure.

Configuration	SWITCH configuration-1	
Configuration Editor	🗟 Save 🥳 Refresh	
 Non-Vital Configuration 		<u> </u>
✓ Vital Configuration	Monitored System	[‡] ♦ MU_UDL •
PHYSICAL configuration	PTC Device	🔹 Switch
 MODULE configuration 	PTC Item Bit Size	₹ [*] 2 *
 ITC configuration SWITCH configuration 	PTC Item Count	₹* 1*
SWITCH configuration-1		
SWITCH configuration-2		
SWITCH configuration-2		

Figure 3-32 Vital Configuration Symbols

ē\$

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

This page intentionally left blank

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 **Product** button and select IVIU PTC GEO on the drop-down menu.
- 2. Then click on the **Create New Site** button.

Configuration	Configuration Editor				
	IVIU PTC GEO 🗸 📲 Create New Site 🔗 Manage Site 📑 Create RC2 Key				

Figure 4-1 Create iVIU PTC GEO Site

- 3. The OCE will show the screen illustrated in the following figure. Enter the name for the site (the name can be up to 20 characters, including spaces).
- 4. 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 is provided separately to each user.

Configuration Editor					
IVIU PTC GEO 🗸 📑 Cr	eate New Site 🔗 Manage S	iite 🔒 Save	📑 Create RC2 Key		
Туре	IVIU PTC GEO				
Name	testsite				
Master DB	Select Master DB	~			
	Select Master DB				
GEO Installation	GVEOSTSTx001.db				
IVIU MCF		Mit Sel	ect MCF		
MCF CRC					

Figure 4-2 iVIU PTC GEO Site Configuration Editor

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

4-2



NOTE

The **Product** button is shown to the left of the **Create New Site** button on all OCE Configuration Editor screens. This button is not shown in the following figures.

			Select GEO Installation	
			CSX1911001	
			CSX1H005	
Configuration Edi	itor		CSX1HBB005	
		Sec.	CSX2H004	
Create New Site	Manage Site 🔒 Save 💷 Create RC2 Kev		CSX2HE001	
		Tools	CSX2HLE005	
			CSX2HRI005	
		Configuration E	CSX2YDCO003	
Туре			CSX3HE002	
1)pc		📑 Create New Site 🛛 🚳	K CSX3LR001	
Name	testsite		CSX3LR58F002	
			CSX_LEx74002	
Master DB	iNSPTCDB001.db ▼		CSX_MEx75003	
		Туре	CSX_NEx81003	
GEO Installation	Select GEO Installation		CSX_SEx68002	
MILMOF	Select MCF	Name	CSX_SEx93001	
		Master Db	CSXAMECHx002	
MCF CRC			CSXAMOPAP001	~
		GEO Installation	Select GEO Installation	~

Figure 4-3 iVIU PTC GEO Site Select GEO Installation

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

Configuration Editor		Configuration Ed	litor		
📑 Create New Site 🔗 Manage Site 🔒 Save 📑 Create RC2 Key		📑 Create New Site 📀	Manage Site 🔒 Save 📑 Creat	ie RC2 Key	
		1			
Туре	IVIU PTC GEO		Туре	IVIU PTC GEO	
Name	testsite		Name	testsite]
Master DB	iCSXPTCDB003.db		Master DB	iCSXPTCDB003.db	_
GEO Installation	CSX1911001	Appliance Model	GEO Installation	CSX_SEx93001	Non-Appliance Model
IVIU MCF		Select MCF	IVIU MCF		Relect MCF
MCF CRC]	MCF CRC		



Select MCF :				×
Select MCF			\sim	🔊 Browse
MCFCRC :				
Create Site	Cancel]		

Figure 4-5 iVIU PTC GEO Select MCF

8. 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 in the following figure on the left. For Appliance GEO Installations the MCF name has 'GEO' in it, as shown in the following figure on the right. Choose the applicable MCF.

Select MCF	🧹 🚺 Brow	se	Select MCF	~	🚺 Brows
Select MCF		- 11	Select MCF		
iCSXPTCGEO004.mcf		- 11	iCSXPTCGEO004.mcf		
iCSXPTCNAG003.mcf		- 11	iCSXPTCNAG003.mcf		
iNSPTCGE0003.mcf		- 11	iNSPTCGEO003.mcf		
iNSPTCNAG002.mcf		- 11	iNSPTCNAG002.mcf		

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

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

Select MCF :		×
iCSXPTCNAG	03.mcf	V 🔊 Browse
MCFCRC :		
81C99156		
Create Site	Cancel	

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 is 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 is 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 following list 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

4-6

Configuration	Signal01				
Configuration Editor Non-Vital Configuration	🔚 Save 🏾 🦉 Refresh				
 Vital Configuration LOGICAL configuration 	Aspect Name Lookup Table 1	₹	SEABOARD1	/ *	
 OBJECT configuration 	Aspect Name Lookup Table 2	ē	SEABOARD2	< *	
Signal01	Signal Type	РТС	High	*	
Signal02	5 71				
Signal03	Plate Type	РТС	None	*	
Signal04	Head A	Å ™	Green/Yellow/Red	. *	
Signal05					
Signal06	Head B	ē	None	<u> </u>	DO NOT CHANGE
Signal07	Head C	≜ ₽₽ ₽	None	*	
Signal08					
Signal09	Debounce rimer (sec)		0		
Signal10					

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.

Configuration	Switch01
Configuration Editor	🔚 Save 🛛 🧭 Refresh
Non-Vital Configuration	
 Vital Configuration LOGICAL configuration OBJECT configuration 	Debounce Timer (sec) 0
OBJECT configuration Cont.1 Switch01 Switch02 Switch02	

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.

4-8



CAUTION

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

Configuration	Signal01
Configuration Editor	🕞 Save 🚰 Refresh
 Non-Vital Configuration 	
 Vital Configuration 	Signal Stop Conditions 🛛 🖗 Clear Behind Opposing Move All 🗸 *
 LOGICAL configuration OBJECT configuration 	Signal Stop Aspect
y SigAspects Aspect 01-16	Special Aspect 1 Representation 🚀 👔 👔 👘
Aspect 17-32	Special Aspect 1 Name 🛷 👘 Invalid 🗸 🗸
Aspect 33-48 Aspect 49-50	Special Aspect 2 Representation de 0
Signal01	Special Aspect 2 Name 🗧 Invalid 🛁 *
Signal02	Special Aspect 3 Representation 🛛 🦸 👔
Signal03	Council Accurt 2 Norma
Signal04	Invalid
Signal05	Debounce Timer (sec) 0 *
Signal06	

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.

Configuration	Switch01	
Configuration Editor	📙 Save 🛛 🛃 Refresh	
Non-Vital Configuration		
 Vital Configuration LOGICAL configuration OBJECT configuration 	Debounce Timer (sec)	•
 OBJECT configuration Cont.1 		
Signal16 Switch01 Switch02		

Figure 4-14 Switch Configuration Menu Appliance Model GEO

Configuration	BlockFault01	
Configuration Editor Non-Vital Configuration Vital Configuration	E Save Refresh	•
 LOGICAL configuration OBJECT configuration OBJECT configuration Cont.1 OTHER configuration 		
 OBJECT configuration Cont.2 Switch16 Switch17 		
Switch18 Switch19 Switch20 BlockFault01		

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 in the following figure. For iVIU PTC GEO applications, there are no parameters that required change under any of these menus.

4-10



Figure 4-16 Physical Configuration Menus



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.



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

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 the parameters on each screen. Refer to 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.

4-12

Configuration	Site Configuration	
Configuration Editor	🔒 Save 🛛 🎽 Refresh 🚺 Default	
✓ Non-Vital Configuration Site Configuration	Site Name	CParchibald
Applications	DOT Number	000000A *
▶ PTC	Mile Post	
Console	White F USL	*
▶ Modules	Time Zone	Eastern (GMT-5:00) 🛛 🗸 *
 ExternalNetworking 	ATCS Address	7 620 100 100 01
▶ Log Setup	SAFE SAFE	*
Set to Default		
 Vital Configuration 		

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 following figure.



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+ (A80403). 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 in the following figure.

Configuration	Serial Port 1		
Configuration Editor	🗟 Save 🍠 Refresh 🔀 Default		
✓ Non-Vital Configuration Site Configuration	Baud Rate	9600 🗸 🗸	
 Applications 	Data Bits	8 🗸	
▶ PTC	Parity	Nono	
		None *	
	Stop Bits	1 🗸	
Laptop Serial Port 1	Flow Ctrl	None	
Serial Port 2	Protocol	GENATCS Field 🗸 🗸	
Serial Port 3	Path Type	None 🗸	

Figure 4-22 Non-Vital: Setting Serial Protocol

Refer to the 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 PTCenable 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 the green box in the following figure).
- 2. Find the ATCS subnode for this GEO (shown in the yellow box in the following figure).
- 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 in the following figure).
- 5. Repeat this for each GEO module shown.

Configuration	Connecti	ons			
Configuration Editor	Channels	Name		🔒 Save 🛛 🔮 Refresh 📑 Default)
	Channel 0	GEO1	>		
Non-vital Configuration	Channel 1	GEO2	->	Name	GE01
Site Configuration	Channel 2	Module 3			
 Applications 	Channel 3	Module 4	⇒	Туре	GEO 🔽
▶ PTC	Channel 4	Module 5		Connection Type	Echelon
Console	Channel 5	Module 6	>		
✓ Modules	Channel 6	Module 7	->	ATCS Subnode	3
Connections	Channel 7	Module 8	⇒	Indication Offset	0
ExternalNetworking	Channel 8	Module 9			·
Log Setup	Channel 9	Module 10	>	Indication Size	1
Set to Default	Channel 10	Module 11		Control Offset	
	Channel 11	Module 12			
 Vital Configuration 	Channel 12	Module 13		Control Size	1
	Channel 13	Module 14		LICN	
	Channel 14	Module 15			0
	Channel 15	Module 16	->	MCF CRC PTC	957e4c5d

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.

Configuration	Connect	ions			
	Channels	Name		🔚 Save 🛛 🤔 Refresh 🔢 Default	
Configuration Editor	Channel 0	GEO1	->		
 Non-Vital Configuration 	Channel 1	GEO2	>	Name	GE01
Site Configuration	Channel 2	Module 3			
Applications	Channel 3	Module 4		Туре	GEO 🗸
▶ PTC	Channel 4	Module 5		Connection Type	Serial
▶ Console	Channel 5	Module 6			
✓ Modules	Channel 6	Module 7		ATCS Subnode	3
Connections	Channel 7	Module 8	>	Indication Offset	0
ExternalNetworking	Channel 8	Module 9			
▶ Log Setup	Channel 9	Module 10		Indication Size	1
Set to Default	Channel 10	Module 11		Control Offset	
	Channel 11	Module 12			0
 Vital Configuration 	Channel 12	Module 13		Control Size	1
	Channel 13	Module 14	>	нем	
	Channel 14	Module 15			0
	Channel 15	Module 16		MCF CRC PTO	957e4c5d

Figure 4-24 Setting the GEO Connection Type

4-17

4.1.2.6 External Networking Menu

The main use of the External Networking menu in iVIU PTC-enable applications, is to set the SNMP parameters required for system management, as shown in the following figure.

Configuration	SNMP	
Configuration Editor	📑 Save) 🍯 Refresh 🚺 Default	
 Non-Vital Configuration Site Configuration 	Destination 1 IP	0.0.0.0
 Applications 	Destination 1 Port	162 *
 PTC Console 	Destination 2 IP	*
▶ Modules	Destination 2 Port	162 *
 ExternalNetworking CAD 	Destination 3 IP	*
WAMS	Destination 3 Port	162 *
WNC Echelon	Destination 4 IP	0.0.0.0 *
SNMP	Destination 4 Port	162 *
Router Setting	Community	Siemens*
▶ Log Setup Set to Default	Contact Info	*
 Vital Configuration 	Alarm Suppression Timer (Minutes)	30 *

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 in the following figure. After a few seconds, the OCE will show a message indicating Build Created Successfully.

Configuration Editor						
🔲 Create New Site 📀 I	Manage Site	😭 Create RC2 Key				
		•				
Туре	IMU PTC GEO					
Name	app1					
Master DB	iCSXPTCDB003.db					
GEO Installation	CSXAMOPAP001					
iVIU MCF	iCSXPTCGE0004.mcf					
MCF CRC	93BEF156					

Figure 4-27 Build Config Files

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

Configuration Editor					
Create New Site	🔗 Manage Site 🚆 Build Config File	Config Report E Create RC2 Key			
Туре	IVIU PTC GEO				
Name	app1				
Master DB	iCSXPTCDB003.db				
GEO Installation	CSXAMOPAP001				
iVIU MCF	iCSXPTCGE0004.mcf				
MCF CRC	93BEF156				

Figure 4-28 Config Reports Button



WARNING

THE CONFIGURATION REPORT MUST BE CHECKED TO ENSURE THAT THE PARAMETERS THAT AFFECT SYSTEM 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 **Product window**.
- 2. The Select Create New Site drop menu is shown in the following figure.



Figure 4-30 Creating a New iVIU Site
3. 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.

		NOTE		
NOTE	The Product button is shown to the left of the Create New Site button on all OCE Configuration Editor screens. This button is not shown in the following figures.			
	Configuration Ed	itor		
	📑 Create New Site 📀	Manage Site 🔚 Save 🗐 📰 Creat	e RC2 Key	
	Туре	iVIU		
	Name	DarkTerrSwitch		
	iVIU MCF		Mit Select MCF	
	MCF CRC			

Figure 4-31 iVIU Site Name

4. Then press the **Select MCF** button (shown in the figure 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 4-32 iVIU Select MCF

5. 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.

Select MCF :	×
iTEST_DTW_D024.mcf ~	\delta Browse
MCFCRC :	
	_
Create Site Cancel	

Figure 4-33 iVIU Enter MCF CRC

6. 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.

Configuration	Configuration	n Editor	
Configuration Editor	📑 Create New Sit	te 🔗 Manage Site 👯 Build Config Files 🗐 Create Re	C2 Key
▼ Non-Vital Configuration Site Configuration			
Applications	Туре	iVIU	
▶ PTC ▶ Console	Name	DarkTerrSwitch	
▶ Modules	iVIU MCF	iTEST_DTW_D024.mcf	
 ExternalNetworking 	MCF CRC	884FE73C	
▶ Log Setup			
Set to Default			
 Vital Configuration 			

Figure 4-34 Ready for Configuration of iVIU

4.2.1 Vital Configuration

 First, go to the Vital Configuration / Physical Configuration and select the required Physical Layout as shown in the following figure. 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.

Configuration	PHYSICAL configuration	1
Configuration Editor	📕 Save 🛛 🦉 Refresh	
Non-Vital Configuration		
 Vital Configuration 	Physical Layout	🕫 itest dtw d
LOGICAL configuration		ITEST DTW D
 PHYSICAL configuration 		
MODULE configuration		
 ITC configuration 		
 CONNECTION configuration 		
Set to Defaults		
 SITE configuration 		

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 in the following figure, there are none.



Figure 4-36 iVIU Object Configuration

 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.

Configuration	sl1 (iVCORE)	
Configuration Editor Non-Vital Configuration 	🔚 Save 🛛 🔮 Refresh	
 Vital Configuration LOGICAL configuration 	ACSES Railroad Line Number	₹ [♠] 0 *
 PHYSICAL configuration 	Alternate ACSES GGG	ē ♥ 0 *
MODULE configuration SLOT 1: sI1 (iVCORE)	Alternate ACSES Subnode	🐔 Not Used 🧹 *
 ITC configuration 	Signal Status Type	🐔 Fixed 🗸 *
CONNECTION configuration	Debounce	100 ms 🗹 *
Set to Defaults SITE configuration 	Installation Address	ē ♦ 0 *
	WNC Src System Type	ē ♥ 0 *
	WNC Compatibility Index	₹* [0]*

Figure 4-37 iVIU Module/Slot 1 Configuration



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 the parameters on each screen. Refer to the PTC Console Manual (SIG-00-13-12A) and iVIU Console Manual (SIG-00-11-05A) for specific details on 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.

Configuration	Site Configuration	
Configuration Editor	📕 Save 🥳 Refresh 🚺 Default	
 Non-Vital Configuration Site Configuration 	Site Name	CParchibald
Applications	DOT Number	000000A *
▶ PTC	Mile Post	
Console		*
Modules	Time Zone	Eastern (GMT-5:00) 🗸 🗸
 ExternalNetworking 	ATCS Address	7 600 400 400 04
▶ Log Setup	SAFE	*
Set to Default		
 Vital Configuration 		

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.



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 in the following figure. After a few seconds the OCE will show a message indicating Build Created Successfully.

Configuration Ed	itor	-
📑 Create New Site 🤇	Manage Site 🔛 Build Config Files	🖬 Create RC2 Key
		-
Туре	IMU PTC GEO]
Name	app1	
Master DB	iCSXPTCDB003.db	l
GEO Installation	CSXAMOPAP001	l
iVIU MCF	iCSXPTCGE0004.mcf	
MCF CRC	93BEF156	

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.

Configuration E	ditor		
Create New Site	⊗ Manage Site 🔅 Build Config File	Config Report Config Report GEO PTC Report	🗊 Create RC2 Key
Туре	IVIU PTC GEO		
Name	app1		
Master DB	iCSXPTCDB003.db		
GEO Installation	CSXAMOPAP001		
ïVIU MCF	iCSXPTCGE0004.mcf		
MCF CRC	93BEF156		

Figure 4-41 Config Reports button

A WARNING

WARNING

THE CONFIGURATION REPORT MUST BE CHECKED TO ENSURE THAT THE PARAMETERS THAT AFFECT SYSTEM 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 is 0 for a non-PTC application.

Unique Check	Numbers
UCN PTC UCN 	: 0x2F60DF49 : 0x1DFB8530

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 **Select Product** drop menu shown in Figure 4-43.
- 2. Then select Create New Site.

c	Configuration	Editor		
	Select Product 🗸	📑 Create New Site	😵 Manage Site	📃 Create RC2 Key
	IVIU PTC GEO			
	WC CPU3			

Figure 4-43 Creating a VIU Site

3. 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.

📑 Create New Site 📀	Manage Site 🔒 Save 📑 Creat	te RC2 Key		
Туре	VIU			
Name	VIUSite			
VIU MCF		Select MUF		
MCF CRC				

Figure 4-44 VIU Editor Window

4. 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.

Select MCF :	_	×
Select MCF	~	🔕 Browse
Select MCF		
ACSESVIU001.mcf		
VTESTUPPTC_D030.mcf		
Create Site Cancel		

Figure 4-45 iVIU Select MCF

5. 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.

Select MCF :			×
VTESTUPPTC_D030.	mcf	\sim	💫 Browse
MCECRC :			
Create Site C	Cancel		

Figure 4-46 iVIU Enter MCF CRC

6. 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.

Configuration	Configuration Editor		
Configuration Editor Non-Vital Configuration Vital Configuration 	Create New Site 🤗	Manage Site 🔛 Build Config Files	Create RC2 Key
	Type Name VIU MCF MCF CRC	VIU VIUSite VTESTUPPTC_D030.mcf 596F7C1B	

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. PHYSICAL configuration 层 Save 🛛 🤔 Refresh Configuration Editor Non-Vital Configuration Vital Configuration **ā**\$ Physical Layout MainBox \sim LOGICAL configuration MainBox Ax1 PHYSICAL configuration Ax2 Ax3 MODULE configuration Dummy1 ACSES configuration Dummy2 ACSES configuration Cont. CONNECTION configuration Set to Defaults SITE configuration

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.

Configuration	ITC_SIGNAL configuration	on-1		
Configuration Editor	🖥 Save 📑 Refresh			
Non-Vital Configuration				
 Vital Configuration LOGICAL configuration 	Monitored System	ē	iVIU_UDL Y	
 PHYSICAL configuration 	PTC Device	ē	Signal 🗸 *	
MODULE configuration	PTC Item Bit Size	- ₹	5*	
ITC configuration ITC_SIGNAL configuration ITC_SIGNAL	PTC Item Count	₽.	6 *	
configuration-1				

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.

Configuration					
Configuration Editor Non-Vital Configuration Site Configuration Applications PTC General 	Message Layout				
WIU					
Emp	📑 Save 🦉 Refresh				
Emp Class C&D Messages	📕 Save 🦉 Refresh				-
Emp Class C&D Messages Beacon Message	📕 Save 🧳 Refresh	Device Type	Site Device ID	Device Name]
Emp Class C&D Messages Beacon Message Time Source	Save 🧭 Refresh	Device Type	Site Device ID signal1	Device Name	
Emp Class C&D Messages Beacon Message Time Source Pref Time Source	Save CRefresh	Device Type Signal	Site Device ID signal1 signal2	Device Name WG EG	
Emp Class C&D Messages Beacon Message Time Source Pref Time Source Hinb Availability	Save Refresh	Device Type Signal	Site Device ID signal1 signal2 signal3	Device Name WG EG FG	
Emp Class C&D Messages Beacon Message Time Source Pref Time Source High Availability	Save Refresh	Device Type Signal Switch	Site Device ID signal1 signal2 signal3 Switch1	Device Name WG EG FG 1W	
Emp Class C&D Messages Beacon Message Time Source Pref Time Source High Availability Device Attribute	Save Refresh	Device Type Signal Switch Hazard Detector	Site Device ID signal1 signal2 signal3 Switch1 BlkFlt1	Device Name WG EG FG 1W bf1	

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.

ITC_SIGNAL configuration-2	ITC_SWITCH configuration-2
Save Refresh	🔒 Save 🛛 🦉 Refresh
Saved parameters successfully	Saved parameters successfully
PTC Order 1	PTC Order 1 🕫 👍
PTC Order 2	PTC Order 2 # 0 *
PTC Order 3 👘 3	ITC_BLKFLT configuration-2
PTC Order 4	🔒 Save 💕 Refresh
	PTC Order 1
	PTC Order 2

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.

Configuration	WIU CHANNEL configure	atio	n	
Configuration Configuration Editor Non-Vital Configuration Vital Configuration LOGICAL configuration PHYSICAL configuration MODULE configuration ITC configuration CONNECTION configuration	WIU CHANNEL configur.	atio ≉	n Yes v * No v * Yes v *	
WIU CHANNEL configuration Set to Defaults SITE configuration	Broadcast Rate (msec) Beacon Bit Time (sec) Beacon End Time (sec)		1000 * 300 *	
	Max Beacon Interval (sec) Vital Message Version	ē.	900 · · ·	

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.

Configuration	Data01/io02	
Configuration Editor	📕 Save 🔮 Refresh	
Non-Vital Configuration		
 Vital Configuration LOGICAL configuration 	Enabled	🔹 Yes
 PHYSICAL configuration 	RRR Offset	ē ♦ 0 *
MODULE configuration	LLL Offset	₹ [●] 0 *
CONNECTION configuration	GGG Offset	ē• 0 *
Data01/io02	SS Offset	₹ [♦] 1 *
Data01/io03 Data01/io04	Msg Timeout (msec)	¢ [♠] 5000 *
WIU CHANNEL configuration	Msg Update Interval (msec)	1000 *
Set to Defaults	Msg Time Offset (sec)	<u>ة</u> • 10 *
 SITE configuration 	,	

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 the following figure for menu examples.

Configuration	Signal Setup		
Configuration Editor	📕 Save 🛛 🦉 Refresh		
Non-Vital Configuration			
 Vital Configuration LOCICAL configuration 	Signal 1 Enabled?	ē ♦	Disabled 🗸 *
OBJECT configuration	Signal 1 Track #	ē ♦	Track 1 🗸 *
✓ Main Signal Setup	Signal 2 Enabled?	ē ♦	Disabled 🗸 *
▶ Select	Signal 2 Track #	ē.∳	Track 1 🗸
Route1	Signal 3 Enabled?	ē †	Disabled 🗸 *
▶ Route2 ▶ Route3	Signal 3 Track #	₹®	Track 1



Configuration	Route 1 Signal 1	
Configuration Editor	📕 Save 🧳 Refresh	
Non-Vital Configuration		
✓ Vital Configuration	Signal Type	🔹 NO LOMA 🗸 *
LOGICAL configuration PHYSICAL configuration	Signal Status	🔹 stop
MODULE configuration	Available Exit Track	🔹 Track 1
 ✓ ACSES configuration ✓ Route 1 	Direction of Exit Track	₹* Up ✓
Route 1 Track Crossed	Dist. To Speed Increase (yds)	₹ [♠] 0 *
Route 1 Signal 1 Route 1 Signal 2	Dist. To Leave Current Track (yds)	₹ * 0
Route 2	Dist. To Be On Exit Track (yds)	ē* 0 *
► Route 3		
Route 4		

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.

Configuration	Site Configuration	
Configuration Editor	📕 Save 📑 Refresh 🛛 💙 Discard	d 🛃 Default
 Non-Vital Configuration 		
Site Configuration		
Access-II Network		
ATCS Router	Site Name	VIUSite
CDL log	Milepost	000.0
Diagnostic Log		
▶ PTC	DOT Number	000000A
▶ Ethernet	Time Zone	Fasters
Event Log		
GPS	Site ATCS Address	7.620.100.100.03
Serial Port		
SNMP		596F7C1B
SNTP		
TCP Port		

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.

Configuration	General	
Configuration Editor	📑 Save 📑 Refresh 🚺 Defau	it
 Non-Vital Configuration Site Configuration 	Subdivision Number	Not Set *
Access-II Network	Device Status SCAC	*
CDL log	Status Config Table ID	0*
Diagnostic Log	Status Config Version	Not Set*
General	Library CRC	•
WIU Configuration	WIU Name	Not Set *
High Availability		
Class D Tests		

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 in the following figure, 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 in the following figure) 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.

Configuration	WIU Configuration		
Configuration Editor Non-Vital Configuration Site Configuration 	🔚 Save 🍠 Refresh 🕥 Discard	Default	
Access-II Network ATCS Router	WIU Address	7.620.100.100.03	
CDL log Diagnostic Log	Encrypted HMAC Key	000000000000000000000000000000000000000	
▼ PTC General WIU Configuration	RC2 Key RC2 Key Confirm		CRC:50A262EC

Figure 4-61 PTC Configuration – WIU Configuration

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

🖥 Save 🍯 Refresh 🛛 💙 Discard	Default
RC2 Key Confirm	
EMP Message Version	0
EMP Header Source Address	
EMP Header Destination Address	XX.L.X.000000:tmc
Data ACK Timeout (msec)	15000
EMP Timed Beacon TTL	12
EMP WIU Status Response TTL	12
EMP Timed Beacon QOS	0
EMP WIU Status Response QOS	0
Data NAK Retry Limit	3

Figure 4-62 PTC Configuration – WIU Configuration EMP Parameters

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

Data NAK Retry Limit	3
Data NAK Retry Limit	3
Data NAK Retry Limit	3
Data NAK Retry Limit	3
Class C Multicast Address	239.255.0.5
AG IP Address (Class D Remote	10 255 255 210
Address)	
Class C Multicast Port	32768
Log Traffic	0
AG Port (Class D Remote Port)	2004
No For (01255 B Remote For	3001
Keep Alive Interval (msec)	30000
Keep Alive ACK Timeout (msec)	15000
Class D Data ACK Enabled	
Class D Data ACK Lilableu	Yes
Retransmit Delay (msec)	0
Connection Attempt Timeout (msec)	30000
Connection Delay (mass)	
Connection Delay (msec)	60000
Connection Retry Limit	
Reconnection Limit	-1

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

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

Time Source	Time Source	
🕞 Save 🏾 🖉 Refresh 💽 Discard 💽 Default	📙 Save 🍠 Refresh 🛛 💙 Discar	d <u> 1</u> Default
Preferred Time Source Enable	Preferred Time Source Enable	Yes
Sync Timeout Value	Sync Timeout Value	0
	Publisher Enable/Disable 1	No
	Publisher EMP Address 1	
	Publisher Enable/Disable 2	No
	Publisher EMP Address 2	
	Publisher Enable/Disable 3	No
	Publisher EMP Address 3	
	Publisher Enable/Disable 4	No ~

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.

High Availability	High Availability
📻 Save 🍠 Refresh 🛛 💙 Discard 💽 Default	🖥 Save 🦉 Refresh 💎 Discard 💽 Default
Enable/Disable HA	Enable/Disable HA
	IP Name/IP Range 1
	TCP Port Number 1 12000
	Idle Timeout Enabled 1 No
	Idle Timeout Seconds 1 0
	IP Name/IP Range 2
	TCP Port Number 2 12000
	Idle Timeout Enabled 2 No
	Idle Timeout Seconds 2 0
	IP Name/IP Range 3

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.

Class D Tests				
🔚 Save 🔮 Refresh 🕥 Discard	<u> </u> Default			
Test Server IP Address	192.168.1.110			
Test Server Port Number	12100			
Test Frame Count	10			
Delay Between Test Frames (msec)	1000			
Test Massage Enchlad				
rest message Enabled	No			
Log Test Results	N			
	res			
ITC Class D Starting Comm ID	1			

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

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 in the following figure 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.

Device Attril	bute								
🔒 Save 🛛 🛃 R	efresh								
Signal									
Site DeviceID	Signal	Track Nan	ne Dire	ection	Milepost	Subdivision Number	Site Name	Description	+ Add
signal1	wg	Not Set	Increas	ing 🗸	000.0	Not Set	VIUSite		×
signal2	EG	Not Set	Decrea	sing 🗸	000.0	Not Set	VIUSite		×
Switch								<u>.</u>	
Site DeviceID	Switch	Track Nan	ne Dire	ection	Milepost	Subdivision Number	Site Name	Description	+ Add
Switch1	1W	Not Set	LF	~	000.0	Not Set	VIUSite		2
Hazard Dete	ctor								
Site DeviceID	Hazard Detector	Track Name	Direction	Milepo	st Subdivision	on Site Name	Description	+ Add	
									-

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.

Message Layout				
🗟 Save 💕 Refresh				
	Device Type	Site Device ID	Device Name	
↑	Signal	signal1	WG	
		signal2	EG	il
	Switch	Switch1	1W	
	Hazard Detector			

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.

Configuration	Laptop	
Configuration Editor	🖶 Save 📑 Refresh	💙 Discard ! Default
Site Configuration		
Access-II Network ATCS Router	DHCP Client Enabled	No
CDL log Diagnostic Log	DHCP Server Enabled	Yes
▶ PTC	Laptop IP	192.168.1.100
	Laptop Network Mask	255.255.255.0
Port One Port Two	Laptop Gateway	192.168.1.1

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.

Configuration	Event Log	
Configuration Editor	📕 Save 🍠 Refresh 💙 Discard	R Default
 Non-Vital Configuration 		
Site Configuration		
Access-II Network		
ATCS Router	Server IP	0.0.0.0
CDL log		
Diagnostic Log		
▶ PTC		
✓ Ethernet		
Laptop		
Port One		
Port Two		
Event 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.

Configuration	GPS	
Configuration Editor	🔒 Save [Refresh 🛛 🕤 Discard	<u> </u> Default
 Non-Vital Configuration 		
Site Configuration		
Access-II Network		
ATCS Router	GPS Time Source	Internal GPS Receiver 🗸
CDL log	Receive Timeout (secs)	Disabled
Diagnostic Log	Receive filleout (Sees)	Internal GPS Receiver
► PTC	Time Message Deviation (secs)	External Serial Port 1
- Ethernet		External via Class C/D Messages
	Consolidated Time Server	
Port One	May Time Change Within Minutee	
PortTwo	(min)	60
FULTWO	Max. Secs Time Change (sec)	3
EventLog		
GPS	Ignored Time Difference (sec)	3
 Serial Port 	T D (D F UD I	
SNMP	Time msgs Before Sending WSM (sec)	5
SNTP	LRM Maximum Seconds Time	2
TCP Port	Difference (sec)	2
► Vital Configuration	No Time Sync Msg (min)	6

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.

Configuration	Laptop Port	
Configuration Editor	📑 Save 🍯 Refresh 🕥 Discard	Default
 Non-Vital Configuration 		
Site Configuration		
Access-II Network		
ATCS Router	Baud Rate	9600 🗸
CDL log	Flow Control	New
Diagnostic Log		None
▶ PTC	Data Bits	8 🗸
▶ Ethernet		
Event Log	Panty	None 🗸
GPS	Stop Bits	1 🗸
🚽 Serial Port		
Laptop Port	Protocol	User 🗸
Port One		
SNMP		

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.

Configuration	SNMP		
Configuration Editor	🔒 Save 🥳 Refresh 🛛 💙 Discard	<u> 1</u> Default	
 Non-Vital Configuration 			
Site Configuration			
Access-II Network	Destination 1 IP	0000	
ATCS Router			
CDL log	Destination 1 Port	162	
Diagnostic Log	Destination 2 IP		
▶ PTC		0.0.0.0	
▶ Ethernet	Destination 2 Port	162	
Event Log			
GPS	Destination 3 IP	0.0.0.0	
	Destination 3 Port	162	
Laptop Port			
Port One	Destination 4 IP	0.0.0.0	
SNMP	Destination / Port		
SNTP	Destination 4 For	162	
TCP Port	Community	Siemens	
 Vital Configuration 	Contact Info		

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.

Configuration	SNTP	
Configuration Editor	📕 Save 🍠 Refresh 🛛 💙 Discard	🚹 Default
 Non-Vital Configuration 		
Site Configuration		
Access-II Network		
ATCS Router	NTP Mode	Unicast 🗸
CDL log	Primary NTP Time Source	neel ata era
Diagnostic Log		poor.ntp.org
▶ PTC	Backup NTP Time Source	
▶ Ethernet	NTD Multicent eddered	
Event Log	NTP Multicast address	0.0.0.0
GPS	NTP UDP Port	123
Laptop Port	NTP Polling Rate	60
Port One	NTP Wait Time	
SNMP		
SNTP		
TCP Port		

4.3.2.16 TCP

Figure 4-74 Non-Vital Configuration – SNTP

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

Configuration	TCP Port		
Configuration Editor	💂 Save 🔮 Refresh 🕥 Discard	【 Default	
 Non-Vital Configuration 			
Site Configuration			
Access-II Network			
ATCS Router	DT TCP Port	10075	
CDL log	VTP TCP Port	10076	
Diagnostic Log		10070	
▶ PTC	AServer UDP Port	5361	
▶ Ethernet	Poute Region One IP		
Event Log		0.0.0.0	
GPS	Route Region Two IP	0.0.0.0	
Laptop Port	Route Maintain Timer	900	
Port One	Route Establish Timer	20	
SNMP		20	
SNTP	Circuit ID	0	
TCP Port Vital Configuration	Office Path Byte	46	

Figure 4-75 Non-Vital Configuration - TCP

Building Configuration Files 4.3.3

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

Configuration Editor				
📑 Create New Site 🧕) Manage Site 🔛 Build Config Files	🛃 Create RC2 Key		
		-		
Туре	IVIU PTC GEO			
Name	app1			
Master DB	iCSXPTCDB003.db			
GEO Installation				
iVIU MCF	iCSXPTCGE0004.mcf			
MCF CRC	93BEF156			

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.

Configuration Editor				
Create New Site	🔗 Manage Site 🙀 Build Config File	Config Report Config Report GEO PTC Report	📕 Create RC2 Key	
Туре	IVIU PTC GEO			
Name	app1			
Master DB	iCSXPTCDB003.db			
GEO Installation	CSXAMOPAP001	1		
IVIU MCF	iCSXPTCGE0004.mcf			
MCF CRC	93BEF156			

Figure 4-77 Config Reports Button



WARNING

THE CONFIGURATION REPORT MUST BE CHECKED TO ENSURE THAT THE PARAMETERS THAT AFFECT SYSTEM 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 is 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

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

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

applications.

eate RC2 Key

Figure 4-79 Creating a GEO Site

3. 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.

NOTE

NOTE

The Product button is shown to the left of the Create New Site button on all OCE Configuration Editor screens, this button is not shown in the following figures.

Configuration Editor				
📑 Create New Site	🤗 Manage Site	🔒 Save [🛿 Create RC2 Key	
Type	GEO			
Name				
GEO MCE			Select MCF	
MCF CRC				

Figure 4-80 GEO Site Configuration Editor

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

Select MCF :	Select MCF :
Select MCF	Select MCF
MCFCRC :	Select MCF CNRGEOS_TEST002.mcf
	EGONSEOS0004.mcf
Create Site Cancel	ROSKN_NW001.mcf Create Site Cancel

Figure 4-81 Selecting MCF

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 dropdown 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	Each Physical L Layout must be parameters.	NOTE sical Layout has its own sets of menus. The correct Physical st be selected prior to setting any other Vital Configuration s.		
Configurat Configura Vital Con LOGIO PHYS SITE C Uniqu	tion ation Editor figuration CAL configuration ICAL configuration configuration te Check Number (UCN)	PHYSICAL configuration	ation	

Figure 4-82 GEO Physical Configuration Selection

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

Configuration	Configuration Editor		
Configuration Editor	📑 Create New Site 🚺	Manage Sit 🛛 💥 Build Config Files 📳 Creat	e RC
Configuration Editor Vital Configuration LOGICAL configuration PHYSICAL configuration MODULE configuration SLOT 1: sl1 (VLP2) SLOT 2: sl2 (CodedTrack) SLOT 3: sl3 (RIO) SLOT 4: sl4 (VPI) SLOT 5: sl5 (Colorlight) SLOT 6: sl6 (Colorlight) SLOT 7: sl7 (Colorlight) SLOT 8: sl8 (CodedTrack) CONNECTION configuration CTC configuration	Type Name GEO MCF MCF CRC	GEO TestSite CNRGEOS_TEST002.mcf FA8B61 39	
Set to Defaults			

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 and then display the following pop up message "Build Created Successfully." Close this window and the OCE will now show the Config Report button. Select this to download the configuration report.

Configuration E	ditor		
E Create New Site	🨵 Manage Site 🗱 Build Config Fi	es Config Report	Create RC2 Key
Туре	GEO		
Name	TestSite		
GEO MCF	CNRGEOS_TEST002.mcf		
MCF CRC	FA8B6139		

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

4-55

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.

NOTE

4.5 GCP SITES

The OCE can be used to create a GCP 5000, GCP 4000, GCP 3000+, MS 4000, or GCE 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.

WARNING



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

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 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.
- Update a site to a new MCF.
- Compare PAC / ZIP files.
4.5.1 Creating a New Site from MCF

- 1. Click on the **Select Product** button and select GCP as shown in Figure 4-86.
- 2. Click on the **Create New Site** button.



Figure 4-86 Creating a GCP Site

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.

NOTE

NOTE

The **Product** button is shown to the left of the **Create New Site** button on all OCE Configuration Editor screens. This button is not shown in the following figures.

Configuration Editor					
Create New Site	🤗 Manage Site 🔒 Save				
		_			
Туре	GCP	Template			
Name	Site1				
GCP MCF		Select MCF			
MCF CRC					
Comments					

Figure 4-87 GCP Editor Window

3. The next parameter is selection of the GCP MCF file. This field is automatically filled in with the last GCP MCF used. To change the MCF or to select a template to use, press **Select MCF** and the OCE opens the window shown in the following figure.

 Create New Site from PAC File (or upgrade template to new MCF) 		
Select Template :		
NotUsed	\sim	🚯 Browse
Select MCF :		
Select MCF	\sim	🚺 Browse
MCFCRC :		
Create Site Cancel		

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.

 Create New Site from PAC File (or upgrade template to new MCF) 		
Select Template :		
Not Used	~	🚯 Browse
Select MCF :		
Select MCF	\sim	る Browse
MCFCRC :		

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.

Select MCF	^	
gcp-t6x-01-2.mcf		
gcp-t6x-02-0.mcf		
gcp-t6x-02-1.mcf		
gcp-t6x-02-2.mcf		
gcp-t6x-02-4.mcf		
gcp-t6x-02-5.mcf		
gcp-t6x-02-6.mcf		
gcp-t6x-02-7.mcf		
gcp-t6x-02-8.mcf		
gcp5k-01-0.mcf		//////
gcp5k-01-1.mcf		(
gcp5k-02-0.mcf		
gcp5k-02-1.mcf		
gcp5k-02-2.mcf		
gcp5k-3trk-0-5.mcf		🚯 Browse
gcp5k-3trk-01-0.mcf	•	
Select MCF	~	🗿 Browse
MCFCRC :		
Create Site Cancel		

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.

(or upgrade ter	nplate to new MCF)		
Select Template :			0.5
Not Used		\sim	😺 Browse
Select MCF :			
gcp5k-02-2.mcf		\sim	🚺 Browse
MCFCRC :			
1100DA56			

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 displayed depends on the type of MCF selected: GCP 5000, GCP 4000, GCP 3000+, or GCE.

Configuration	C	onfiguration I	Edi	tor		
Configuration Editor		📑 Create New Site	0	Manage Site	🔆 Build Config Files	
Site Configuration						
 GCP Programming 						
SEAR Programming	Ту	ре		GCP		Template
 Display Programming 	Na	ime		GCP1		
	G	CP MCF		gcp5k-02-2.	mcf	
	м	CF CRC		1100DA56		
	Co	omments				/ Update

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 is 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.

Configuration	TEMPLATE programming	g	
Configuration Editor GCP Programming TEMPLATE programming	📕 Save) 🍞 Discard) (🔶 Pret	v 🔿 Next	TEMPLATE: selection
BASIC configuration PREDICTORS configuration GCP programming AND tracks configuration ADVANCED programming	Template	4A:6 Remotes 1A:6 Trk Bi 1B:2 Bi, 2 Uni, 2 Bi 1C:2 Bi, 2 Uni pairs 1D:3 Uni pairs 1D:3 Uni pairs	✓ • •
SSCC programming IO assignment SITE programming	Description	2A:4 Bi, 2 Rem 2B:3 Bi, 3 Rem 2D:1 Bi, 5 Rem 2D:1 Bi, 5 Rem 2E:4 Uni, 2 Rem 2G:Bi,4 Uni, Rem 2G:Bi,4 Uni, Rem 2H:2 Uni pairs, 4 Rem 3A:4 Bi, Rem pair 3B:2 Bi, 2 Rem pairs 3D:Uni pair,2 Rem pairs 3E:2Uni pairs, Rem pair 3E:2Uni pairs, Rem pair 3G:Bi,2uni, rem, rem pr 4A:6 Remotes), all looking same ,4,5, 3 Dax A And 2 to
		Set Template Def	aults

Figure 4-93 GCP 4000: GCP Programming

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



Figure 4-94 GCP 4000: 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.

TEMPLATE progr	amming		
🔒 Save 🛛 🍞 Discard	두 Prev	→ Next	
			TEMPLATE: module configuration
Chassis Type		Dual Six Track	✓ *
Track 1/PSO 1 Slot		Track	*
Track 2/RIO 1 Slot		Not Used	✓ *
Track 3/PSO 2 Slot		Not Used	*
Track 4/PSO 3 Slot		Not Used	*
Track 5/RIO 2 Slot		Not Used	× *
Track 6/RIO 3 Slot		Not Used	*

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.

Configuration	SITE programming	
Configuration Editor GCP Programming	🔒 Save 🍞 Discard (/ Prev	SITE: programming
BASIC configuration		
PREDICTORS configuration GCP programming	Radio Subnode	1*
AND tracks configuration	+ Field Password	Off 🗸 *
ADVANCED programming	+ Supervisor Password	Off 🗸
IO assignment	+ Low Battery Enabled	Off 🗸
SITE programming	ATCS Site Id	
	Location	

Figure 4-96 GCP 4000: 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

SITE programming	
🔒 Save 🛛 🛃 Refresh	
ATCS Address	A 7.620.100.100.16

Figure 4-97 GCP 4000: 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).

SITE programming	
🔒 Save 🥳 Refresh 🔥 Default	
Site Name	4k-2-6-1
DOT Number	000000A *
Mile Post	000.0 ★



4.5.1.2 GCP 5000 Sites

4.5.1.2.1 Site Configuration

The Site Name will default to the name chosen for the site, as shown in the following figure. Change this if necessary. Set the DOT if applicable, this is used in the default name for the Configuration (PAC) files. If Vital ATCS communications will be used between GCP systems, or the SEAR II 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 Subnode parameter.
- In the GCP 5000 the SEAR IIi and CPU will obtain their ATCS information from this one place, unlike the GCP 4000 where the ATCS addresses have to be set independently of each other.

Site Configuration		
📙 Save 🛛 🔮 Refresh 🔢 Default		
Site Name	My Cross St 101	
DOT Number	13245A	
Mile Post	000.0	*
Time Zone	Eastern (GMT-5:00)	*
ATCS - Railroad	620	*
ATCS - Line	100	*
ATCS - Group	100	*
ATCS - Display Subnode	1	*
ATCS - CPU Subnode	16	*
ATCS - SEAR Subnode	99	*
SEAR Temp. Format	Fahrenheit V	*

Figure 4-99 GCP 5000 Site Configuration

4.5.1.2.2 GCP Programming

The first step in the GCP programming is 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

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.

Configuration	Setup Wizard		
Configuration Editor	Overview	🗟 Save 🔗 Refresh	
Configuration Editor Site Configuration • GCP Programming Setup Wizard • Basic Configuration • GCP and Island Programming • Logic Programming • Input/Output Assignments • SEAR Programming • Display Programming	TEMPLATE: selection TEMPLATE: module configuration TEMPLATE: preemption TEMPLATE: track 1-Bi, Island TEMPLATE: AND 1 XR TEMPLATE: OOS TEMPLATE: OP assignment TEMPLATE: IP assignment	Template Description	1A:3 Trk Bi • 1A:3 Trk Bi • 1C:1 Bi, 1 Uni pairs • 10:1 Uni pairs • 20:1 Uni pairs • - 2C:2 Uni, 1 Rem • - 32:1 Uni pairs • 30:Uni pairs • - 33:Bi, Rem pair • 30:Uni pairs • - 30:Uni pairs • - 4:3 Remotes • 5:A:1 Remote pair • All tracks at the crossing. And 1 XR = Trk 1,2,3 Prime. And 2 to And 8 not set.

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.

Configuration	Prime (Used)	
Configuration Editor	Trk1/SL2	
Site Configuration	📕 Save 🛛 🛃 Refresh	
▼ GCP Programming		
Setup Wizard	+ Drimo Llood	*
Basic Configuration	+ Phine Osea	Yes
👻 GCP and Island Programming	Prime Warning Time (sec)	38
Track 1	+ Prime Offset Distance (ft)	•
GCP Frequency		
Island Frequency	Switch MS EZ Level	10 *
Predictors	+ Prime MS/GCP Mode	Pred 🗸 *
Prime (Used)	Drime Dieleus Delay (coo)	
Dax A (Not Used)	Finite Fickup Delay (Sec)	15
Dax B (Not Used)	+ Prime UAX	No 🖌
Dax C (Not Used)		
Dax E (Not Used)		
Dax E (Not Used)		
Day C (Not Used)		
Enhanced Dataction		
Enhanced Detection		
MS Control		
Wraps and Override		
CCP Miscellaneous		
Ger Miscellaneous		

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 displayed as shown in the following figure.

+ Prime UAX	No	*
+ Prime UAX	Yes	1
Prime UAX Pickup (sec)	5	*

Figure 4-102 GCP Programming Hidden Parameters

NOTE

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 following case, 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.

Input Assignments			
📙 Save 📑 Refresh			
IN 1.1	T1 Prime LIAX I	\sim	
IN 1.2	Not Used	~	*

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 GCP 5000, the OCE allows the user to set the values for digital inputs on the SEAR.

The SEAR IIi has 63 digital inputs, two of these are accessible on the front of the SEAR IIi. The remaining 61 are connected to traces on the back plane of the chassis that allow the SEAR IIi 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.

Configuration	Digital Inpu	ts			
Configuration Editor	« Prev 1 2	3 4 Next »	_	🔒 Save 🔗 Refresh 🚺 Default)
Site Configuration	Channels	Name			
	Maint Call	Maintenance Call	>	Template	Please Select a Template 🗸 🗸
 GCP Programming 	OUT 1.1	SP1_1			
 SEAR Programming 	OUT 1.2	SP1_2		Algorithm	Discrete ×*
Application (CDL)	IN 1.1	T1 Prime UAX		Name	Maintenance Call
Digital Inputs	IN 1.2	SP1_4			
Analog Inputs	OUT 2.1	SP2_1		Tag	MntCall
Non Vital Outputs	OUT 2.2	SP2_2		Off State Name	On
Echelon Modules	IN 2.1	SP2_3			
Communications	IN 2.2	SP2_4		On State Name	Off
 Serial Ports 	SP 2.1	SP2_5		Toggling State Name	Toggle
Set to default	TRK2 RCV	SP2_6			
	TRK2 CHK	SP2_7		Off Debounce (ms)	100
Display Programming	TRK2 XMT	SP2_8		On Debounce (ms)	100
	SP 3_1	SP3_1			
	SP 3_2	SP3_2		Toggle Period (ms)	1000
	SP 3_3	SP3_3			

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 preassigned and show the function assigned in the GCP programming in the Name column, for example:

Digital Inp	uts			
« Prev 1	2 3 4 Next »		🔒 Save 🛛 🚰 Refresh 📝 Default	
Channels	Name			
Maint Call	Maintenance Call		Template	Please Select a Template 🗸 🗸
OUT 1.1	SP1_1	>	Algorithm	
OUT 1.2	SP1_2			Discrete
IN 1.1	T1 Dax A Enable	•	Name	T1 Dax A Enable
IN 1.2	T1 Prime UAX		L	
OUT 2.1	SP2_1	>	lag	SP1_3
OUT 2.2	SP2_2		Off State Name	Deenergized
IN 2.1	5 5 2 3	-		

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 GCP 3000+ Sites

4.5.1.3.1 Site Configuration

The Site Name will default to the name chosen for the site, as shown in the following figure. Change this if necessary. Set the DOT if applicable, this is 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.

Site Configuration	
🔚 Save 📑 Refresh 🚺 De	fault
Site Name	3k-test1
DOT Number	000000A *
Mile Post	*
Time Zone	Eastern (GMT-5:00) 🗸 *
ATCS - Railroad	620 *
ATCS - Line	100 *
ATCS - Group	100 *
ATCS - Display Subnode	1 *
ATCS - CPU2+ Subnode	16 *
ATCS - SEAR Subnode	99 *
Units of Measure	Standard 🗸 *

Figure 4-108 GCP 3000+ 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.

Configuration	General Configuration	
Configuration Editor Site Configuration	🔚 Save 🛛 🍼 Refresh	
 GCP Programming General Configuration 	Number of Tracks	2 *
GCP and Island Programming	RIO Module Used	Yes 🗸
▶ DAXes	Number of DAXes	None 🖌
 MS Control/Transfer Track Maintenance 	Adv Preempt Timer (sec)	0 * (OFF)
 Set to Default 	OOS Control	Display 🗸 *
▶ Display Settings	OOS Timeout (hrs)	1
	External Evt Recorder	No 🖌

Figure 4-109 GCP 3000+ 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

Configuration	Laptop	
Configuration Editor Site Configuration GCP Programming Display Settings Laptop Security Set to Default	Refresh Configuration	Server 💉 192.168.255.81

Figure 4-110 GCP 3000+ Display Settings: Laptop

Configuration	Security	
Configuration Editor	🕞 Save 🍠 Refresh 🔒 Default	
Site Configuration	Maintainer Paceword	
 GCP Programming 	Maintainer Fassword	*
▼ Display Settings	Security Enabled	None 🗸 🗸
Laptop	Session Inactivity Timeout (Minutes)	
Security	Session mactivity inneout (windles)	20 *
Set to Default		

Figure 4-111 GCP 3000+ Display Settings: Security

4.5.1.4 GCP 5000 (GCE) SITES

4.5.1.4.1 Site Configuration

The Site Name will default to the name chosen for the site, as shown in the following figure. Change this if necessary. Set the DOT if applicable, this is used in the default name for the Configuration (PAC) files. If Vital ATCS communications will be used between GCE systems, or the SEAR IIi 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 Subnode parameter.

• In the GCP 5000 (GCE) the SEAR IIi and CPU will obtain their ATCS information from this one place, unlike the GCP 4000 where the ATCS addresses have to be set independently of each other.

Site Configuration		
🔒 Save 🛛 🛃 Refresh 🔒 Default		
Site Name	My Cross St 101	
DOT Number	13245A	
Mile Post	000.0	*
Time Zone	Eastern (GMT-5:00) 🗸 🗸	*
ATCS - Railroad	620	*
ATCS - Line	100	*
ATCS - Group	100	*
ATCS - Display Subnode	1	*
ATCS - CPU Subnode	16	*
ATCS - SEAR Subnode	99	*
SEAR Temp. Format	Fahrenheit 🗸	*

Figure 4-112 GCP 5000 (GCE) Site Configuration

4.5.1.4.2 GCP PROGRAMMING

The GCP programming menu when using the GCE will start selection of the Modules in the system.

Configuration	Module Selection	
Configuration Editor	📕 Save 🏾 🏺 Refresh	
Site Configuration		
	PSO 1 Slot	PS0 ~ *
Module Selection	PSO 2/RIO 1 Slot	Not Used 🗸 🗸
Adv Preemption	PSO 3 Slot	Not Used 🗸
Vital Comms Links Out of Service	PSO 4/RIO 2 Slot	PSO 🗸
Set to Default	PSO 5/RIO 3 Slot	PSO 🗸
 PSO Programming Logic Programming 	SSCC-1 Slot	sscc3i 🗸 *
 SSCC Programming 	SSCC-2 Slot	sscc3i 🗸 *
 Input/Output Assignments Track Names 	SEAR Used	Yes 🗸
 SEAR Programming Display Programming 		

Figure 4-113 GCP Programming Menus for GCE Application

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 Preempt Logic is set to Advance and the change saved, new parameters will be displayed, as shown in the following figure.

+ Preempt Logic	None ~	*
+ Preempt Logic	Advance	
Adv Preempt Delay (sec)	10	*
Adv Preempt IP Used	No	• *

Figure 4-114 GCP Programming Hidden Parameters

NOTE

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



Figure 4-115 Example of an Invalid Setting

4.5.1.4.3 SEAR Programming

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

Configuration	Application (CDL)	
Configuration Editor Site Configuration GCP Programming SEAR Programming Application (CDL) Digital Inputs Analog Inputs	Display Q & A Previous Next Start Remove CDL	Upload CDL

Figure 4-116 SEAR CDL Selection

On the GCP 5000 (GCE), the OCE allows the user to set the values for digital inputs on the SEAR.

The SEAR IIi has 63 digital inputs, two of which are accessible on the front of the SEAR IIi. The remaining digital inputs are connected to traces on the back plane of the chassis, that allow the SEAR IIi to monitor the GCE I/O, without requiring any external wiring.

The Channels column indicates the name on the GCP 5000 (GCE) chassis terminals. The names shown in the Channels column will depend on what type of module is defined in the module configuration.

If a PSO 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, PSO2 1 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.

C	onfiguration	Digit	al Inputs				
	And the Filler	« Pre	v <mark>1 2 3 4</mark>	I Next »		🔒 Save 🛛 🤔 Refresh 🔒 Default]
	Configuration Editor		Label	Name			
	Site Configuration		Maint Call	Maintenance Call	+	Template	Please Select a Template 🗸 🗸
Þ	GCP Programming		OUT 1.1	PSO 1 RX1 Occupancy	->	Algorithm	
•		PSO 1	OUT 1.2	PSO 1 RX1 Stick			
	Application (CDL)		IN 1.1	Preempt Health	->	Name	Maintenance Call
	Digital Inputs		IN 1.2	SP1_4		-	
	Analog Inputs		OUT 2.1	SP2_1		Tag	MntCall
	Non Vital Outputs		OUT 2.2	SP2_2		Off State Name	On
	Echelon Modules		IN 2.1	SP2_3			
	Communications		IN 2.2	SP2_4		On State Name	Off
	 Serial Ports 	Empty	OUT 2.3	SP2_5		Toggling State Name	Toggling
	Set to default		PS02 1 RCV	SP2_6			
	Display Programming		PSO2 2 RCV	SP2_7	->	Off Debounce (ms)	100
	Display i regramming		PSO2 TX	SP2_8		On Debounce (ms)	100
			OUT 3.1	SP3_1			
		Empty	OUT 3.2	SP3_2		Toggle Period (ms) 1000	1000
			IN 3.1	SP3_3	>		
			IN-3.1	31.2_1			

Figure 4-117 SEAR Digital Inputs Screen

The Name column indicates the function that 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 preassigned and show the function assigned in the GCP programming in the Name column. For example:

Digital Inputs									
« Pre	× 1234	Next »		🔒 Save 🛛 💆 Refresh	🦹 Default				
	Label	Name							
	Maint Call	Maintenance Call		Template		Please Select a Template			
	OUT 1.1	PSO 1 RX1 Occupancy	->	Algorithm				*	
PSO 1	OUT 1.2	PSO 1 RX1 Stick	+			Disticle			
	IN 1.1	Preempt Health	->	Name		PSO 1 RX1 Stick			
	IN 1.2	SP1_4		neT	L				
	OUT 2.1	SP2_1	->						

Figure 4-118 SEAR Digital Inputs Screen - Example



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.

4.5.1.4.4 Display Programming

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



Figure 4-119 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.

4.5.1.5 Build Configuration Files

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

Configuration Editor							
📑 Create New Site	🤡 Manage Site	Build Config Files	Config Report				
Туре	GCP		Template				
Name	TemplateGC	P					
GCP MCF	gcp5k-02-2.1	mcf					
MCF CRC	1100DA56						
Comments			Vpdate				

Figure 4-120 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.

Configuration E	Editor	
📕 Create New Site	😵 Manage Site 🙀	Creating PAC will set hidden parameters to default values Do you want to proceed?
		OK Cancel
Туре	GCP	
Name	GCP1	
GCP MCF	acp5k-02-2.mc	a

Figure 4-121 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.

Create New Site	8 Manage Site 🔅I 🔽	Prevent this page from creating ad	ditional dialogs
Гуре	GCP	ОК	Cancel
Vame	GCP1		
GCP MCF	gcp5k-02-2.mcf		
MCF CRC	1100DA56		
Comments			

Figure 4-122 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 4-123 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:

Configuration Editor							
📑 Create New Site	🥹 Manage Site 📑 Create RC2 Key						
	Open						
	Close						
	Save As						
	Export						
	Import						
_	import site						

Figure 4-124 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**.

Import file :		6
C:\fakepath\CONFIG	G-232323A-2017J	\delta Browse
Site Name :		
232323A-2017Jul4		
Ok	Cancel	

Figure 4-125 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.

Configuration E	ditor			
Create New Site (🕙 Manage Site 🗮 Build Config Fi	es [*]	🔅 Config Report	
			Min Program Steps	
			Template Report	
Туре	GCP		Program Report	
Nama	000000A 0017 Jula 1	_	Config Report	
Name	232323A-2017Jul4_1	_	Version Report	
GCP MCF	GCP-T6X-01-2.mcf		GEO PTC Report	
MCF CRC	0DFE7A0C]	
Comments			Update	

Figure 4-126 Show Report

From this point the user can modify the configuration if desired 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 4-127.

	📑 Create New Sit	e 📀 Manage Site	📳 Create RC2 Key
	iVIU PTC GEO		
	iVIU		
	VIU		
	GEO	_	
	GCP		
1	WC CPU3	<mark></mark>	

Figure 4-127 Creating a GCP Site

2. Enter a name for the site.

Configuration Editor							
📑 Create New Site 📀 I	Manage Site 🔒 Save						
Туре	GCP	Template					
Name	Site1						
GCP MCF		Select MCF					
MCF CRC							
Comments]					
		-					

Figure 4-128 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**.

O Create New Site	×
 Create New Site from PAC File (or upgrade template to new MCF) 	
PAC/TPL File :	
Select PAC/TPL File	V 🚺 Browse
Select MCF :	
Select MCF	V 🚯 Browse
MCFCRC :	
Create Site Cancel	

Figure 4-129 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

NOTE

If the drop-down arrow next to Select PAC/TPL File is selected, the dropdown 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.

◯ Create New Site		×
 Create New Site from PAC File (or upgrade template to new MCF) 		
PAC/TPL File :		
CONFIG-123456A-2017Jul4.PAC	\sim	🔞 Browse
Select MCF :		
gcp-t6x-01-2.mcf	\sim	🚯 Browse
MCFCRC :		
0DFE7A0C		
Create Site Cancel		

Figure 4-130 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.

 Create New Site Create New Site from PAC File (or upgrade template to new MCF) 		×
CONFIG-232323A-2017Jul4.PAC	\sim	\delta Browse
Select MCF :		
gcp-t6x-02-8.mcf	~	🔕 Browse
MCFCRC :		
2D89077E		
Create Site Cancel		

Figure 4-131 Change MCF

7. Once the correct MCF has been selected, click the **Create Site** button (shown in Figure 4-131) 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\.

	^ Name	Date modified	Туре	Size
	AuxFiles	7/4/2017 3:31 PM	File folder	
	gcp-t6x-02-8.mcf	7/4/2017 3:31 PM	MCF File	491 KE
1	🚳 mcf.db	7/4/2017 3:31 PM	Data Base File	3,023 KE
	nvconfig.sql3	7/4/2017 3:31 PM	SQL3 File	670 KE
lav12	🔊 rt.db	7/4/2017 3:31 PM	Data Base File	184 KE
10y12	rtstatus.sql3	7/4/2017 3:31 PM	SQL3 File	49 KE
lay12_1	site details yml	7/4/2017 3:31 PM	YML File	1 KE
/lay12_2	Site1 PAC Import Report.html	7/4/2017 3:31 PM	HTML File	12 KE

Figure 4-132 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 4-133 Import Report

4.5.3 Creating Templates

NOTE

The GCP MCFs are generic application files for GCP 4000, GCP 5000 GCP 3000+, or SGCP 4000/MS 4000s. 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, if the railroad wants to use the following default values:

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

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 following steps, 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 4-134 PAC File loaded

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

Create New Site	×
 Create New Site from PAC File (or upgrade template to new MCF) 	
Select Template :	
Not Used 🗸	🔕 Browse
Select MCF :	
gcp-t6x-02-8.mcf 🗸	🔕 Browse
MCFCRC :	
2D89077E	
Create Site Cancel	

Figure 4-135 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.

TEMPLATE programmin	ıg	
📕 Save 💙 Discard (🄶 Pre	ev 🔿 Next	
	TE	MPLATE: selection
Template	1D:3 Uni pairs	✓ *
	1A:6 Trk Bi	^
	18:2 Bi, 2 Uni, 2 Bi	
	IC:2 ві, 2 Uni pairs	<u>1</u> 2
	1D:3 Uni pairs	T 4
	2A:4 Bi, 2 Rem	
	2B:3 Bi, 3 Rem	
	2C:2 Bi, 4 Rem	
	2D:1 Bi, 5 Rem	
Description	2E:4 Uni,2 Rem	
	2F:2 Bi,2 Uni, 2 Rem	1 XR = 1rk 1,2,3,4,5,6
	2G:Bi,4 Uni, Rem	
	2H:2 Uni pairs, 4 Rem	
	3A:4 Bi, Rem pair	

Figure 4-136 Enable all Tracks and Predictors

7. In the example shown in Figure 4-136, 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.

	BASIC: module configuration		
		6	PREDICTORS: track 1
Chassis Type	Dual Six Track 🗸 *		
Track 1/PSO 1 Slot	Track 💙 *	Prime Used	Yes 💙 *
Track 2/RIO 1 Slot	Track	Dax A Used	Yes
Track 3/PSO 2 Slot	Track	Dax B Used	Yes
Track 4/PSO 3 Slot	Track	Dax C Used	Yes
Track 5/RIO 2 Slot	Track	Dax D Used	Yes
Track 6/RIO 3 Slot	Track	Dax E Used	Yes
SSCC-1 Slot	sscc3i 🗸 .	Dax F Used	Yes
SSCC-2 Slot	SSCC3i	Dax G Used	Yes
SEAR Used	Yes 🖌		



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

GCP programming		
📕 Save 🍞 Discard 🔶 Prev	→ Next	1
Successfully saved parameters		
\bigcirc	GCF	e: track 1 prime
Prime Warning Time (sec)	25	
+ Prime Offset Distance (ft)	0	*
Switch MS EZ Level	10	*
+ Prime MS/GCP Mode	Pred	*
Prime Pickup Delay (sec)	30	
+ Prime UAX	Not Used 🗸	*

Figure 4-138 Changing Default Values for Template

 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.

		BASIC configuration			
PREDICTORS configuration	on		🕞 Save 💗 Discard 🦛 Prev	Next	
🔒 Save 🍞 Discard 🦛 Prev	Next			BASIC	C: module configuration
O	PREDICT	FORS: track 1	Chassis Type	Dual Six Track	v *
			Track 1/PSO 1 Slot	Not Used	••
Prime Used	Yes 🔹 🕇		Track 2/RIO 1 Slot	Not Used *	•
Dax A Used	No 🔻 *		Track 3/PSO 2 Slot	Not Used *	•
Dax B Used	No •		Track 4/PSO 3 Slot	Not Used *	•
Dax C Used	No 🔻		Track 5/RIO 2 Slot	Not Used *	•
Dax D Used	No •		Track 6/RIO 3 Slot	Not Used *	•
Dax E Used	No •		SSCC-1 Slot	SSCC3i	* *
Dax F Used	No *		SSCC-2 Slot	SSCC3i	v *
Dax G Used	No		SEAR Used	Yes	• *

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

Configuration Editor				
📑 Create New Site	🮯 Manage Site	Build Config Files	🧟 Config Report	
Туре	GCP		Template	
Name	TemplateGC)P		
GCP MCF	gcp5k-02-2.	mcf		
MCF CRC	1100DA56			
Comments			Vpdate	

Figure 4-139 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 display the following pop up message "Template updated successfully."

Template Name: Config-2017Jul04	×	
Create Template Cancel	Template Name : basic-4k-mcf-02-8-1A	×
	Create Template Cancel	

Figure 4-140 Set Template Name

The template files are stored in folders under:

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



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.

Create New Site		×
 Create New Site from PAC File (or upgrade template to new MCF) 		
Select Template :		
Not Used	~	🚯 Browse
Not Used		
basic-4k-mcf-02-8		🚺 Browse
MCFCRC :		
Create Site Cancel		

Figure 4-141 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 4-142 TEMPLATE: Selection Screen

To avoid problems for the GCP 4000 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 Updating a Site to use a new MCF

The OCE allows a site created with one MCF to be upgraded to use a different MCF. To do this, open the site to be updated, then select the 'Upgrade MCF' button.

Configuration Editor				
	GCP 🗸 🔜 Cr	eate New Site 🔗 Manage Site 🗮	Build Config Files	
	Туре	GCP	Template	
	Name	gce3		
	GCP MCF	gce_5p_00_05_07.mcf	Dpgrade MCF	
	MCF CRC	2BE32930		
	Comments		Vpdate	
Ĩ				

Figure 4-143 Upgrade MCF Button

This will open the Upgrade MCF menu. From here:

- Select the new MCF to be upgraded to, using either the drop down menu (if the MCF has already been used), or using the browse button(if this is the first time this MCF has been used in the OCE).
- Enter the CRC if necessary (new MCF).
- Then, select the Upgrade Site button.

gce_5p_00_05_12.mcf	🗸 🚺 Browse
MCFCRC :	
F11C0A66	
Upgrade Site Cancel	

Figure 4-144 Upgrade MCF Menu
The site will be upgraded to use the new MCF. After upgrading, check the configuration carefully to ensure it is correct as the new MCF may include new parameter or change default values.

Note that at this point, MCF upgrades have to be within the same family, i.e., a GCP 4000 site can only be upgraded with a different GCP 4000 MCF, or a GCP 5000 to a different GCP 5000 MCF etc.

Also note major changes to MCF functionality will prevent upgrades being possible:

It is not possible to update sites created with MCF gcp_t6x_02-1.mcf and earlier to use a later MCF.

All GCP 5000 MCFs can be upgraded to later ones.

All GCE MCFs can be upgraded to later ones.

4.5.6 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 in the following figure.



Figure 4-145 Compare PAC Files

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

Compare PAC	C Files
😑 Compare 🛛 💆	Download
Select PACfile 1	CONFIG-112000A-2017Jul4.PAC
Select PACfile 2	CONFIG-112000A-2017Jul4-1.PAC

Figure 4-146 Compare two PAC Files

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

Compare PAC Files			
😑 Compare 🔛 Download			
Select PACfile 1 : CONFIG-112000A-2017Jul4.PAC	Browse		
PAC Fil	e Information		
	MCF Name	MCFCRC	Revision
CONFIG-112000A-2017Jul4.PAC	gcp5k-3trk-0-5.mcf	84B08C6E	005
CONFIG-112000A-2017Jul4-1.PAC	gcp5k-3trk-0-5 mcf	84B08C6E	005
PAC file	s are identical		



If the PAC files are not identical, the OCE will show the differences in red, as illustrated in Figure 4-148. 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.

Compare PAC Files					
Compare Download					
Select PACfile 1 : CONFIG-112000A-2017Jun28.PAC Select PACfile 2 : CONFIG-112000A-2017Jun28-3.PAC	<u>~</u>	Browse			
Goto Non-Vital Report	PAC file co	mparison report			
	PAC File I	nformation			
		MCF Name	MCFCRC	Revision	
CONFIG-112000A-2017Jun28.PAC		gcp5k-3trk-0-5.mcf	84B08C6E	005	
CONFIG-112000A-2017Jun28-3.PAC		gcp5k-3trk-0-5.mcf	84B08C6E	005	
	Drogram (`omparison			
CONEIG-112000A-2017.lun28 PAC	Fiografii C	CONFIG	5-112000A-2017.Jun28-3 PA	r	
Parameter	Value	Pa	rameter	Value	
Trk 2: Island Frequency					
≠ Track 2 : IsI Frequency	7.1 kHz	Track 2 : Isl Frequency		Not Set	
≠ Track 2 : Island Distance	121	Track 2 : Island Distance		120	
Output Assignments					
≠ : OUT 1.1	T2 Island	: OUT 1.1		Not Used	
± · ∩IIT 1 2	T1 Prime	· OLIT 1 2		Not Used	

Figure 4-148 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.

Compare PAC Files	Opening Pac_comparison_Report.html	×
Compare Download	You have chosen to open: Pac_comparison_Report.html	
Select PACfile 1 : CONFIG-112000A-	which is: HTML file (12.5 KB) from: http://localhost:9090	
Select PACfile 2 : CONFIG-112000A-	What should Firefox do with this file?	
<u>Goto Non-Vital Report</u>	Open with Launch Windows App (default) Save File	
	Do this <u>a</u> utomatically for files like this from now on.	
CONFIG-112000A-2017Jun28.PAC CONFIG-112000A-2017Jun28-3.PAC	OK Cancel	3C6E 3C6E

Figure 4-149 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 are shown as below on the right side (in the yellow box). Changed parameters are highlighted in red.

Compare PAC Files			
😑 Compare 🔛 Download			
Select PACfile 1 : CONFIG-000000A-2017Jul4.PAC Select PACfile 2 : CONFIG-000000A-2017Jul4.PAC	✓	🔏 Browse	
≢ Track 3 : Station Stop Timer	10	Track 3 : Outbound PS Timer	20
≠ Track 3 : Poor Shunting Level	2	Track 3 : Inbound PS Sensitivity	High
≠ Track 3 : Trailing Switch Logic	Off	Track 3 : Trailing Switch Logic	On
GCP: track 3 MS Control			
≠ Track 3 : MS/GCP Ctrl IP Used	No	Track 3 : MS/GCP Ctrl IP Used	No
≢ Track 3 : Bidirn Dax Passthru	No	Track 3 : Bidirn Dax Passthru	No
+		Track 3 : Warn Time-Ballast Comp	High
+		Track 3 : False Act on Train Stop	No
+		Track 3 : EX Limiting Used	Yes
+		Track 3 : EZ Correction Used	Yes
GCP: track 4			
≠ Track 4 : Island Connection	Isl 4	Track 4 : Island Connection	Isl 4
≓ Track 4 : Island Distance	199	Track 4 : Island Distance	120
≓ Track 4 : Island Distance	199	Track 4 : Island Distance	120
+		Track 4 : Directionally Wired	No

Figure 4-150 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.

Compare PA	C Files	
😑 Compare 🛃	Download	
Select PACfile	CONFIG-000000A-2017Jul4.zip	3 Browse
		•

Figure 4-151 Comparison between ZIP and PAC 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.

Compare PAC Files								
😑 Compare 🛃	Download							
Select PACfile	: CONFIG-000000A-2017Jul4.zip	🔊 Browse						
Select PACfile	CONFIG-123456A-2017Jul4.PAC	🚳 Browse						

Figure 4-152 Comparison between ZIP and PAC Files

4.5.7 Configuration

The Configuration menu options will depend on the type of GCP. The top level options differ, as shown in the following figure.



Figure 4-153 Configuration Menus for GCP 4000, 3000+, 5000 & GCE

The GCP Programming section contains the specific menus from the type of MCF selected.

With the GCP 4000, the site configuration parameters, such as Location name, DOT, milepost are set under the GCP Programming – Site Programming menu. With the other GCP products these are all set in the Site Configuration menu.

NOTE

NOTE

When a GCP 5000 site is created, the Site Configuration screen can show the EMP Address parameter, to be used with the Connectivity functionality. This functionality is not currently released with the GCP 5000. Therefore, this parameter is not functional at this time.

The OCE does not support programming of the display or the SEAR in the GCP 4000.

The GCP 3000+ has no SEAR IIi, so there is no SEAR programming menu.

The GCP 5000 and GCE support the option to program the SEAR IIi by using the SEAR Programming menu.

The latest GCP software supports options for connectivity. These options are not applicable to display builds prior to 1.6.x (i.e., 1.5.26 and earlier). The GCE does not support connectivity options. For description of the connectivity menus see 4.3.1.2.

With the GCP 3000+, 5000, and GCE, the OCE generates a PAC file that is primarily intended to be loaded via the A80485 display modules, as it sets the display and SEAR configuration. If the A80485 display module is not present, or has failed, the PAC file could be loaded into the CPU III, but in this case it will not set the display or the SEAR configuration.

With the GCP 4000 and SGCP 4000/MS 4000, the PAC file can be loaded via the display or DT.

4.5.7.1 SEAR Programming

The SEAR Programming menu provides the following options.



Figure 4-154 SEAR Programming menus for GCP 5000 and GCE

4.5.7.1.1 CDL

As part of the SEAR programming, the user can select a CDL file.

Site Configuration GCP Programming SEAR Programming CDL	Display Q & A Previous Next Start Remove CDL Reset Name Niew CDL Log Upload CDL	oad
Application(CDL) Digital Inputs CDL Analog Inputs Non-Vital Outputs	L File:	

Figure 4-155 SEAR CDL Selection

Once the CDL has been loaded, the user can answer the CDL questions by pressing the Start button, and pressing Next to move to the next question, as shown in the following figure.

Application(CDL)		
Display Q & A 🛛 ┥ Previous 🕨 Next	t <u>*</u> Restart —	Remove
CDL File Name : 9VC29-A01A.cdl		
✓ RAILROAD NUMBER?	2	
CROSSING CONFIGURATION?	NORMAL	
✓ AND1 USED AS XR?	NO	
AND2 USED AS XR?	NO	
AND3 USED AS XR?	NO	
AND4 USED AS XR?	NO	
AND5 USED AS XR?	NO	
AND6 USED AS XR?	NO	
🗸 AND7 USED AS XR?	NO	
🗸 AND8 USED AS XR?	NO	
VENTRANCE GATES?	1	
✓ 85% VOLTAGE RELAY OUT?	NO	
V BATTERY BANKS?	1	
V BATT MON USED?	NO	
VPREEMPTION?	NO	
VINTERNAL CROSSING CONTROLLEI	RS? O	
	:Deau	
USE CELL MODEM NON-CRITICAL FE	ATURE? NO -	

Figure 4-156 SEAR CDL Questions

Once all of the questions have been answered, the user can compile the CDL, as shown in the following two figures.



Figure 4-157 SEAR CDL Compile Message



Figure 4-158 SEAR CDL Compile Complete



CDLs are specific to the crossing application.

4.5.7.1.2 Digital Inputs

The Digital Inputs menu allows the user to configure the digital inputs on the SEAR IIi. The SEAR IIi monitors the I/O points of the modules in the GCP chassis. If the GCP is not using the I/O point for a vital function (i.e. it has not been set in the I/O assignments in the GCP Programming menus), then this I/O point can be connected to an external source and monitored by the SEAR IIi.

The first column shows the type of module in the chassis or if the slot is empty. If the slot on the chassis is empty, all 8 I/O points are available for use by the SEAR III. Note that with the GCP 5000, the OCE is not looking at the chassis type, so this screen will show all 6 slots, when not all slots may actually be available if a 2 track ,3 track, or 5 track chassis is used.

The next label column shows the name of the I/O point as observed on the GCP chassis. The labels will change depending on whether there is a A80418 GCP module, A80428 PSO (in GCE), or RIO in the slot, as it assumed the chassis will be appropriately labelled with the RIO specific mylars having been attached

The Name column shows the name of the function assigned to this input. If the function is being used by the GCP Programming, the name will be automatically filled out. For example, the T1 Prime and AND 1 XR, and this digital input's properties will be locked, as they cannot be changed by the user. This is shown in the following figure.

NOTE

If a CDL loaded, it may also assign functions to digital inputs, and change their name, tag, and other properties. At this time, the OCE does not update the Digital Inputs screen with the values that are set by the CDL.

When the CDL is loaded into the display module and the PAC file loaded, the CDL will, at that point, set any digital input states it has defined. If it is required to make the reports created by the OCE consistent with what will be seen in the field, the Digital Input changes set in the CDL, can be manually set in these screens.



Figure 4-159 Digital Input Menu

NOTE

If the GCP Programming is not using the Digital Input, then the user can select the function of it by selecting one of the options in the template menu as shown in the following figure.

Digita	al Inputs						
« Prev	/ 1 2 3 4	Next »		📑 Save 🦉 Refresh 🚺 🚹 Default			
	Label	Name					
	Maint Call	Maintenance Call		Template	Please Select a Template	~	
	OUT 1.1	T1 Prime	>		Please Select a Template	^	
Track 1	OUT 1.2	T1 Island		Algorithm	POK1		
	IN 1.1	SP1_3	>	Name	POK2		
	IN 1.2	SP1 4			Door 1		
	0IIT 2.1		->	Tag	Door 2		
	0IIT 2.2	SP2_2		Of Prote Name	3 Vehicle Det		
l P	IN 2 1	SP2 3		Uff State Name	4 venicie Det		
	IN 2.1	SD2_3		On State Name	GP 1 1		
Empty	SD 2.4	5F2_4			GP 1.2		
	3P 2.1	SPZ_J	7	Toggling State Name	GP 2.1		
	TRK2 RCV	SP2_6		Off Dehaunaa (ma)	GP 2.2		
	TRK2 CHK	SP2_7	>		GD 1.1		
	TRK2 XMT	SP2_8		On Debounce (ms)	GD 1.2		
	OUT 3.1	SP3_1	>		GD 1.3		
Empty	OUT 3.2	SP3_2		Toggle Period (ms)	GD 1.4		
	IN 3.1	SP3_3	->		GD 2.1		
					GD 2.2		
					GD 2.3		
					GD 2.4	\sim	

Figure 4-160 Digital Input Menu showing Template Options

A default set of properties is set when a template is selected, such as the default tag name. The user can edit these as desired.

Digita	al Inputs					
« Prev	(1 2 3 4	Next »		🔒 Save 🥳 Refresh 🔥 Default		
	Label Name Saved Successfully					
	Maint Call	Maintenance Call		Template	РОК1 🗸	
	OUT 1.1	T1 Prime	⇒	Alexandra.		
Track 1	OUT 1.2	T1 Island		Algorithm	Discrete 🗸	*
	IN 1.1	SP1_3	⇒	Name	POK1	
	IN 1.2	SP1_4		_		
	OUT 2.1	SP2_1	⇒	l Tag	РОК1	
	OUT 2.2	SP2_2		Off State Name	Deenergized	
	IN 2.1	SP2_3	⇒		Energized	
Emnty	IN 2.2	SP2_4		On State Name Toggling State Name		
ւաթայ	SP 2.1	POK1	+		Toggling	
	TRK2 RCV	SP2_6			logginig	
	TRK2 CHK	SP2_7	⇒	Off Debounce (ms)	100	
	TRK2 XMT	SP2_8		On Dehounce (ms)	100	
	OUT 3.1	SP3_1	⇒		100	
Empty	OUT 3.2	SP3_2		Toggle Period (ms)	1000	
	IN 3.1	SP3_3	⇒			

Figure 4-161 Digital Input Menu Discrete Options

For the GCP 5000: the option to use the Trackside Sensor (TSS) and Ground Fault Tester (GFT) as digital inputs is restricted as follows:

- 1. Track 2 SP 2.1
- 2. Track 3 SP 3.1
- 3. Track 4 SP 4.1
- 4. Track 5 SP 5.1
- 5. Track 6 SP 6.1
- 6. SSCC1 IN 7.1 to IN 7.5
- 7. SSCC2 IN 8.1 to IN 8.5
- 8. DI 1 (J3)
- 9. DI 2 (J3)

For the GCE: the option to use the Trackside Sensor (TSS) and Ground Fault Tester (GFT) as digital inputs is restricted as follows:

- 10. Track 2 SP 2.1
- 11. Track 3 SP 3.1
- 12. Track 4 SP 4.1
- 13. Track 5 SP 5.1
- 14. SSCC1 IN 7.1 to IN 7.5
- 15. SSCC2 IN 8.1 to IN 8.5
- 16. DI 1 (J3)
- 17. DI 2 (J3)

The SEAR IIi has two inputs available on its J3 front connector, these are available on the above screen as DI1 (J3) and DI2 (J3) as shown in the following figure.

« Prev	1 2 3 4	Next »		🔒 Save 🔗 Refresh 📑 Default		
	Label	Name				
	IN 7.4	GD 1.1		Template	Gnd Flt Testr 1 🗸 🗸	
SSUC Z	IN 7.5	GP 1.1	->			
	1GC	Gate Output 1		Algorithm	GFT 🗸	1
	1BELL	SSCC1 Bell	->	Name	Gnd Flt Testr 1	
	IN 8.1	SSCC2 VI-1				
	IN 8.2	SSCC2 VI-2	->	Tag	GFT1	
	IN 8.3	SSCC2 VI-3		Battery 1 Name		
	IN 8.4	SSCC2 VI-4	->			
	IN 8.5	SSCC2 VI-5		Battery 1 Tag	BATT1	
	2GC	Gate Output 2	->	Battery 2 Name		
	2BELL	SSCC2 Bell				
	Main Power	Main Power	->	Battery 2 Tag	BATT2	
	Stby Power	Stby Power				
	DI1 (J3)	Extern DI1	->			
	D12 (J3)	Extern DI2				

Figure 4-162 Digital Input DI1(J3)

When the Digital Input has an algorithm type of:

- 1. Discrete
- 2. MTSS
- 3. GFT

This is automatically set based upon the template. When the Algorithm is set to Discrete, the user can configure:

- 1. Name
- 2. Tag
- 3. Off State Name
- 4. On State Name
- 5. Toggling State Name
- 6. Off Debounce
- 7. On Debounce
- 8. Toggle Period

The Name, and On, Off, and Toggle state names will be used to describe a state change on this input in the SEAR log.

The Tag is how this input will be referenced in the CDL. When the Algorithm is set to GFT, the user can configure:

- 9. Name
- 10. Tag
- 11. Battery 1 Name
- 12. Battery 1 Tag
- 13. Battery 2 Name
- 14. Battery 2 Tag

The Name, and Battery 1 and 2 Names, will be used to describe a state change on this input in the SEAR log.

The Tag, Battery 1 and 2 Tag, is how this GFT input will be referenced in the CDL. When the Algorithm is set to MTSS, the user can configure strings for the following:

- 15. Name
- 16. Tag
- 17. Bell Audio Off
- 18. Bell Audio On
- 19. Bell Power Off

- 20. Bell Power On
- 21. Gate Up Off
- 22. Gate Up On
- 23. Gate Down Off
- 24. Gate Down On
- 25. Gate Tip Off
- 26. Gate Tip On

The Tag is how this input will be referenced in the CDL. The configured strings will be used in the SEAR log.



4.5.7.1.3 Analog Inputs

The Analog Input menu, shown in the following figure, allows the user to set the names and tag for the 6 Analog inputs available in the SEAR IIi. The 'Label' column shows the fixed name of the input. Two of these inputs are available on the front J3 connector of the SEAR IIi, the TEMP(J3) and BATT MON (J3) inputs.

The analog inputs can be used to monitor the voltage on standard 12 VDC and 24 VDC batteries. They may also be used to monitor any DC voltage from 0 VDC to 36 VDC. There are six battery monitor channels which are used as follows:

- 1. General purpose on the front of the SEAR (BATT MON).
- 2. Monitoring the GCP CPU and I/O module power (VBN).
- 3. Monitoring each SSCC IIIi module power (SSCC1 and SSCC2).
- 4. Monitoring the internal system temperature (Int. Temp).
- 5. Monitoring the external system temperature (Ext. Temp).

NOTE

NOTE

If a CDL loaded, it may also assign functions to Analog Inputs, and change their name, tag, and other properties. At this time, the OCE does not update the Analog Inputs screen with the values that are set by the CDL.

When the CDL is loaded into the display module and the PAC file loaded, the CDL will, at that point, set any Analog Input states it has defined. If it is required to make the reports created by the OCE consistent with what will be seen in the field, the Analog Input changes set in the CDL, can be manually set in these screens.

Analog Inputs

Label	Name		🔚 Save 🛛 🞅 Refresh 🚺 Default		
Supply Batt Monitor	Supply Batt Monitor		Saved Successfully		
SSCC1 Batt Monitor	SSCC 1 Batt Monitor	⇒	Name	Extern Batt Monitor	*
SSCC2 Batt Monitor	SSCC 2 Batt Monitor		_		
Temperature	Temperature	>	Tag	BATT MON	*
TEMP (J3)	External Temperature		Sample Period (ms)	100	*
BATT MON J(3)	Extern Batt Monitor	⇒	Resolution (V/10)	-	
				5	*
			Average Counts	32 🗸	*

Figure 4-163 Analog Input Menu

Setting	Description
Name	Up to 20 characters long and used to describe the input but not used in event reports.
Tag	Up to 10 characters long and used to identify the input in event reports and local menus.
Sample Period	Number of milliseconds between processing of the input. Events for the input can be logged on this interval only. Internally, the SEAR IIi samples the inputs every 10 milliseconds regardless of this setting.
Resolution	Specifies the change in volts (or degrees Fahrenheit) required before an event will be logged into the SEAR IIi event buffer.
Samples to Average	Specifies the number of consecutive 10 millisecond samples to average together to determine the voltage present on the input. This value can be set to no averaging, 2 samples, 4 samples, 8 samples, 16 samples, or 32 samples.

Table 4-1 B	attery Input	Settings
-------------	--------------	----------

4.5.7.1.4 Non Vital Outputs

The Non Vital Output menu, shown in the following figure, allows the user to set functions for the 8 non vital outputs available on the SEAR IIi. The first six shown are wired to the AUX DB25 J1 connector using the pin numbers shown. The RLY1 and RLY2 are available on the front of the SEAR on the J3 connector.

Non Vital outputs can be controlled to the OFF state, ON state, TOGGLING state, or PULSED state. In the OFF state, the relay contacts are open. In the ON state, the relay contacts are closed. In the TOGGLING state, the relay contact is opening and closing at the user specified duty cycle and period. The settings for each relay output are described in Table 4-2.

NOTE

NOTE

If a CDL loaded, it may also assign functions to Non Vital Outputs, and change their name, tag, and other properties. At this time, the OCE does not update the Non Vital Outputs screen with the values that are set by the CDL.

When the CDL is loaded into the display module and the PAC file loaded, the CDL will, at that point, set any Non Vital Output states it has defined. If it is required to make the reports created by the OCE consistent with what will be seen in the field, the Non Vital Output changes set in the CDL, can be manually set in these screens.

Non Vital Outpu	its				
Label	Name		🔒 Save 🥳 Refresh 🔒 Default		
RTU 1 (AUX J1 Pin 11)	General 1				
RTU 2 (AUX J1 Pin 12)	Aux. Output 2	->	Template	AC Control 🗸]
RTU 3 (AUX J1 Pin 13)	Aux. Output 3		Name	AC Control	*
RTU 4 (AUX J1 Pin 14)	Aux. Output 4	>	Ταα	AC Control] .
RTU 5 (AUX J1 Pin 15)	Aux. Output 5] "
RTU 6 (AUX J1 Pin 16)	Aux. Output 6	->	Off State Name	Deenergized	*
RLY 1 (J3)	AC Control	⇒	On State Name	Energized	*
RLY 2 (J3)	Relay Output 2	>	Toggling State Name	Toggling] *
			Toggle Period (seconds)	1	*
			Duty Cycle (Percent)	50	*

Figure 4-164 Non Vital Outputs Menu

The user can configure the template setting, which has the following options:

- 1. General 1
- 2. General 2
- 3. General 3
- 4. General 4
- 5. AC Control
- 6. Ground Flt Test
- 7. Maint Call

The Names are used in the SEAR log entries. The Tag is use by the CDL.

Setting	Description
Name	Up to 20 characters long and used to describe the relay but not used in event reports.
Tag	Up to 10 characters long and used to identify the relay in event reports and local menus.
State Names	Up to 12 characters in length and displayed in event reports and local menus.
Toggle Period	Specifies the time between cycles of toggling the relay output from off to on, and back to off in seconds.
Duty Cycle	Specifies the percentage of time the relay is in the ON state when toggling.

Table 4-2 Relay Output Settings

4.5.7.1.5 Echelon Modules

The SEAR IIi is capable of communicating with 16 modules via the Echelon. The Echelon module menu, shown in the following figure, is used to select which modules are used.

The SEAR IIi supports the following Node Types: iLOD, GCP 5000, SSCC, VHFC, WAG, and MCM.

Slot 16 is by default the GCP that the SEAR II is monitoring. This will have echelon node number 16 by default.



Eche	lon Modules			
SLOT	Modules		🔒 Save 🥳 Refresh 🔒 Default	
Slot 1	Module 1			
Slot 2	Module 2	>	Name	GCP4K *
Slot 3	Module 3		_	
Slot 4	Module 4	->	Туре	GCP5000 🗸 *
Slot 5	Module 5		Node Number	16
Slot 6	Module 6	>		
Slot 7	Module 7			
Slot 8	Module 8	>		
Slot 9	Module 9			
Slot 10	Module 10	->		
Slot 11	Module 11			
Slot 12	Module 12	>		
Slot 13	Module 13			
Slot 14	Module 14	>		
Slot 15	Module 15			
Slot 16	GCP4K	->		

Figure 4-165 Echelon Modules: Type GCP 5000

When type is set to iLOD, the user can configure the items shown in the following figure.

The flash rate in Flashes per Minute sets the message resolution for the lamps being monitored. This means that if the flash rate varies by as much as this number per minute, then an event message will go from the iLOD to the SEAR IIi.

The current resolution determines how much of a shift in current will generate a message to the SEAR IIi. Refer to the iLOD, A80271 User Guide, SIG-00-03-05 for more details.

📙 Save 🏾 🤔 Refresh 🔹 Default		
🗸 Saved Successfully		
Name	Module 15	*
Туре	ilod 🗸	
Chan 1 Name	N15 iLOD Input 1	
Chan 1 Tag	N15 iLOD1	
Chan 1 Flash Res (FPM)	4	
Chan 1 Current Res (A/10)	10	
Chan 2 Name	N15 iLOD Input 2	
Chan 2 Tag	N15 iLOD2	
Chan 2 Flash Res (FPM)	4	
Chan 2 Current Res (A/10)	10	

Figure 4-166 Echelon Modules: Type iLOD

When type is set to SSCC, the user can configure the items, as shown in the following figure.

The SEAR IIi can be used to monitor an external SSCC module. When SSCC is selected, the parameters shown in the following figure, are available. The user needs to configure the ATCS address of the SSCC module and the Echelon node (which should correspond to the Subnode fields in the ATCS Address).

	🔒 Save 🛛 👸	Refresh		Default				
	Saved Su	ccessful	ly					
Nai	me				Module	15		*
Тур	e				SSCC		~]
AT	CS Address			SAFE	7.620.11	00.100.15.01]
No	de Number				5]
	Vital Inputs	Vital Out	tputs	Non Vita	al Inputs	े		
#	Nam	e						
0	Vital Input 1		->					
1	Vital Input 2		->					
2	Vital Input 3		->					
3	Vital Input 4		->					
4	Vital Input 5		→					
5	Vital Input 6		→					
6	Vital Input 7		→					
7	Vital Input 8		→					

Figure 4-167 Echelon Modules: Type SSCC

The user can specify the following:

- Vital Inputs 1 8:
 - o Name, default Vital Input x (where = 1..8),
 - o Tag, default VIx (where = 1..8)
 - o Off State Name, default Off
 - o On State Name, default On
- Vital Outputs Bank A
 - o Lamp 1 Name, default 1 Lamp Output 1
 - o Lamp 1 Tag, default 1 L1
 - o Lamp 1 Burned Out Name, default Burned Out
 - o Lamp 1 Flashing Name, default Flashing
 - o Lamp 1 Off State Name, default Off

- o Lamp 1 On State Name, default On
- o Lamp 2 Name, default 1 Lamp Output 2
- o Lamp 2 Tag, default 1 L2
- o Lamp 2 Burned Out Name, default Burned Out
- o Lamp 2 Flashing Name, default Flashing
- o Lamp 2 Off State Name, default Off
- o Lamp 2 On State Name, default On
- o Bell Name, default 1 Bell Output
- o Bell Tag, default 1 Bell
- o Bell Off State Name, default Off
- o Bell On State Name, default ON
- o Gate Ctrl Name, default 1 Gate Control
- o Gate Ctrl Tag, default 1 GC
- o Gate Ctrl Off State Name, default De-energized
- o Gate Ctrl On State Name, default Energized
- Vital Outputs Bank B
 - o Lamp 1 Name, default 2 Lamp Output 1
 - o Lamp 1 Tag, default 2 L1
 - o Lamp 1 Burned Out Name, default Burned Out
 - o Lamp 1 Flashing Name, default Flashing
 - o Lamp 1 Off State Name, default Off
 - o Lamp 1 On State Name, default On
 - o Lamp 2 Name, default 2 Lamp Output 2
 - o Lamp 2 Tag, default 2 L2
 - o Lamp 2 Burned Out Name, default Burned Out
 - o Lamp 2 Flashing Name, default Flashing
 - o Lamp 2 Off State Name, default Off
 - o Lamp 2 On State Name, default On
 - o Bell Name, default 2 Bell Output
 - o Bell Tag, default 2 Bell
 - o Bell Off State Name, default Off
 - o Bell On State Name, default ON
 - o Gate Ctrl Name, default 2 Gate Control
 - o Gate Ctrl Tag, default 2 GC

- o Gate Ctrl Off State Name, default De-energized
- o Gate Ctrl On State Name, default Energized
- Non-Vital Inputs:
 - o Flash Sync
 - o Name, default Flash Sync
 - o Tag, default Flash Sync
 - o Off State Name, default De-energized
 - o On State Name, default Energized
 - o Maint Call Sync
 - o Name, default Maint Call
 - o Tag, default Maint Call
 - o Off State Name, default De-energized
 - o On State Name, default Energized

When type is set to VHFC, the user can configure the items shown in the following figure.

📙 Save 🛛 🛃 Refresh 📝 Default		
🖌 Saved Successfully		
Name	Module 15	*
Туре	VHFC ~	
Receiver Mode	DTMF Only 🗸	
STX List	F9F5F1FB00	
ETX List	F60000000	
Data/DTMF Channel	1	
Voice Channel	1	

Figure 4-168 Echelon Modules: Type VHFC

Setting	Possible Values	Default Value	Description
Receiver Mode	DTMF Only Framed Stream	DTMF Only	Determines method the VHF Communicator will use to packetize the incoming data. See descriptions of types below. In DTMF only mode, no data will be received.
STX List	0 – FF (hex) for each of 5 values	F5 F9 FB F1 00	This setting is only applicable if Rx Type is set to Framed. List of up to 5 possible byte values that can represent the start of a valid frame of data. An entry with a value of zero is not used.
ETX List	0 – FF (hex) for each of 5 values	F6 00 00 00 00	This setting is only applicable if Rx Type is set to Framed. List of up to 5 possible byte values that can represent the end of a valid frame of data. An entry with a value of zero is not used.
Date/DTMF Channel	1 – 8	1	Specifies the channel of the radio that will be used to send and receive data packets and DTMF tones.
Voice Channel	1-8	1	Specifies the channel of the radio that will be used to transmit digitized speech.

Table 4-5 Concloss hype with o bellings	Table 4-3	Echelon Modules	: Type VHFC Settings
---	-----------	-----------------	----------------------

For more details regarding the VHFC, refer to the VHF Communicator, A80276, User Guide, SIG-00-03-002.

When type is set to WAG, the user can configure the items shown in the following figure.

When a WAG is selected, the Node number is available. The range is 1-99, this is the Subnode on the Echelon of the WAG. By default, this is 1.

The user may give the WAG a name, which the SEAR will use when logging entries related to this module.

📙 Save 🛛 🛃 Refresh 🚺 🔒 De	fault	
🗸 Saved Successfully		
Name	Module 15	*
Туре	WAG ~	
Node Number	15	

Figure 4-169 Echelon Modules: Type WAG

When type is set to MCM, the user can configure the items shown in the following figure.

When an MCM is selected, the Node number is available. The range is 1-99, this is the Subnode on the Echelon of the MCM. By default, this is 1.

The user may enter a name for the MCM, which the SEAR will use when logging entries related to this module.

📙 Save 🛛 🥳 Refresh 🔒 Defaul	t	
Name	Module 15	*
Туре	мсм 🗸	1
Node Number	15	

Figure 4-170 Echelon Modules: Type MCM

4.5.7.1.6 Communications

The OCE allows the user to select the site type as shown in the following figure. The Sear IIi may be configured to operate with external communication devices. For more details on communication networks, refer to the Event Analyzer Recorder (SEAR II) A80273, SIG-00-02-07 manual.

The communications parameters are configured on the Communication tab, shown in the following figure.

Communications				
🔚 Save 🦉 Refresh 🔥 Default				
Site Type	None	~ *		
	Node			
	Collector			
	CDS-902X			
	None			
	Bullhorn/ModBus			
	Dial-up			

Figure 4-171 Communications Settings Screen

Site Type	Settings	
No Communication	N/A	
Bullhorn/MODBUS	POLL ID	
NODE	Site address, office address, office site, backup site 1, backup site 2, field device	
Collector	Site address, office address, poll ID, office device, office port, field device	
CDS-902X (Cellular Modem)	none	
Dial-up	Modem init string	

Table 4-4	Communications	Settings
-----------	----------------	----------

4.5.7.1.7 Node

A SEAR IIi module with the site type set to Node is a slave unit in the ATCS enhanced routing protocol used to "hop" alarms to a Collector. Messages may hop from one Node to the next until they reach a collector where they will be forwarded to the office system. The Node settings are listed in the following table.

Setting	Description	
Site Address	ATCS address of this site. The address is a type 7 field address with the following format: 7.RRR.LLL.GGG.SS.DD.	
Office (WAMS) ATCS Addr	ATCS address of the Wayside Alarm Management System software. The address is a type 2 office address with the following format: 2.RRR.NN.DDDD.	
Primary Hop ATCS Addr	ATCS address of the primary site to send message bound for the office system. This site may be the Collector or another Node that is closer to the Collector. The address is a type 7 field address with the following format: 7.RRR.LLL.GGG.SS.DD.	
Backup1 Hop ATCS Addr	ATCS address of the first site to route messages through if communication is lost with the Office Site. The address is a type 7 field address with the following format: 7.RRR.LLL.GGG.SS.DD.	
Backup2 Hop ATCS Addr	ATCS address of the second site to route message through if communication is lost with both the Office Site and Backup Site 1. The address is a type 7 field address with the following format: 7.RRR.LLL.GGG.SS.DD.	
	The device used to communicate with other SEAR II sites in the network. This setting can be any of the following: VHFC Comm (Echelon)	
Field Device	SSR (Spread Spectrum Radio) (RS232)	
	WAG (Echelon)	
	VHF Comm (RS232)	
	None	

4-119

Table 4-5 Node Settings



Figure 4-172 SEAR Communications: Node

When configuring communications, if the user picks an Echelon device such as the VHF communicator for the communications medium, the user must also add that module in the Echelon configuration.

No Communication

A SEAR IIi with the site type set to No Communication has no link to an office system and no alarms or messages are handled by the unit.

Collector (master)

A SEAR IIi with the site type set to Collector is the master unit in the ATCS enhanced routing protocol that has a direct link to the office system. SEAR IIi modules configured as Nodes report their alarms and status to this site. The unit then forwards the messages to the office system.

Communication			
🔒 Save 💙 Discard 🥰 Refresh 🔥 Default			
Site Type	Collector 🗾		
Office (WAMS) ATCS Addr	2.620.00.0000		
Poll ID	1		
WAMS Enabled	Yes *		
WAMS XID Enabled	No *		
Office Device	Direct (RS232) *		
Field Device	None *		

Figure 4-173 SEAR Communications: Collector

A Collector site has the settings shown in the following table.

Table 4-6	Collector	Site	Settings

Setting	Description	
Office (WAMS) ATCS Address	ATCS address of the Wayside Alarm Management System software. The address is a type 2 office address with the following format: 2.RRR.NN.DDDD.	
Poll ID	The Genisys protocol poll ID of this site.	
WAMS Enabled	Enables or disables communication with the back-office Wayside Alarm Management System	
WAMS XID Enabled	Enables or disables the WAMS XID messages. Typically, this can be left to No and is not used.	
	The device used to communicate with the office. This setting can be any of the following: Direct (RS232)	
Office Device	MCM (RS232)	
	WAG (Echelon)	
	MCM (Echelon)	
	Dial Modem (RS232)	

Modem Phone Number	If the selected office device is Dial Modem (RS232), the phone number for the office system must be specified.
Modem Init String	If the selected office device is Dial Modem (RS232), an initialization string for the modem may be specified. NOTE: Auto answer for the modem must be disabled. The SEAR IIi handles phone answering.
Field Device	The device used to communicate with Node SEAR IIi sites in the network. This setting can be any of the following: VHFC Comm (Echelon) SSR (Spread Spectrum Radio) (RS232) WAG (Echelon) VHF Comm(RS232) None

CDS-902X

A SEAR IIi configured with a site type of CDS-902X sends alarm messages to the office system using the Data remote CDS-902X cellular modem. The messages are sent to the office using the Short Message Service (SMS) or the phone system. There are no additional settings.

Bullhorn/Modbus

A SEAR IIi configured with a site type of Bullhorn/Modbus communicates with the office using a Bullhorn cellular unit and the Modbus protocol. A Bullhorn/Modbus site has the following settings.

Setting	Description
Poll ID	Modbus protocol poll identifier. 1-255

4-122

Table 4-7 Bullhorn/Modbus Settings

4.5.7.1.8 Serial Ports

The SEAR IIi has two serial ports, the USER port and the AUX port. These are configured from the Serial Port tab.

Setting	Description	
Baud Rate	300, 600,1200,2400,4800,9600 (default),19200,38400, 57600	
Data Bits	7,8 (default)	
Parity	None (default), odd, even	
Stop Bits	1 (default), 2	
Flow Ctrl	None, Hardware, Radio	

Table 4-8 Serial Port Settings

Configuration	AUX	
Configuration Configuration Editor Site Configuration GCP Programming SEAR Programming Application (CDL) Digital Inputs Analog Inputs Non Vital Outputs Echelon Modules Communications Serial Ports AUX User Set to default Display Programming	AUX Save Refresh Baud Rate Data Bits Parity Stop Bits Flow Ctrl	9600 * 8 * None * 1 * None *

Figure 4-174 Serial Ports: AUX port

Set to Default:

This can be used to set all SEAR configuration to its defaults settings.

4.5.7.2 Connectivity

The Connectivity programming has the following submenus. The Connectivity functionality will provide the ability to communicate between the GCP and the office using the standard EMP/Class D protocols. This feature is currently under site trial and is not available in the standard released GCP 5000. It only is functional with A80485 Display build: ng5k_mef_1.6.28r.tgz. Please leave these parameters at their default values until this feature is fully supported by the GCP 5000.



Figure 4-175 Connectivity Menu

4.5.7.3 Display Programming

The display programming has the following submenus.



Figure 4-176 Display Programming Menu

4.5.7.3.1 Serial Port

The serial port menu allows the user to configure the serial port connected to the DIAG connector on the chassis, as shown in the following figure. This port is used when the user is loading new software into the CPU II+ or I/O modules. The DIAG port on the front of the Display module is not user-configurable.

Configuration	Serial Port	
Site Configuration GCP Programming 	Port 1	🚺 Default
 SEAR Programming 		
■ Display Programming Serial Port	Baud Rate	9600 *
▶ Ethernet Ports	Data Bits	8*
Router Settings ▶ Log Setup	Parity	None *
Security	Stop Bits	1*
Web Server	Flow Ctrl	None *
Display Options Set to Default	Path Type	None *

Figure 4-177 Display Programming Serial Port

4.5.7.3.2 Ethernet Ports

The Display Module has three Ethernet ports. The laptop port should be accessed from the front of the Display Module. Ethernet port 1 and 2 should be accessed from the RJ45 connectors on the GCP Chassis if they are available.

4-126

NOTE

NOTE

For Ethernet Ports 1 and 2, use the appropriate RJ45 connections on the GCP 5000 chassis. Do not use the RJ45 connections on the front of the display module, these are only used in a GCP 4000.

Laptop Ethernet Port:

This menu allows the user to select between Disabled, DHCP Server, or DHCP Client mode. The default setting is as a DHCP Server with IP Address 192.168.255.81.

Configuration	Laptop	
Site Configuration	🔒 Save 💙 Discard 💋 Refresh	Default
 GCP Programming 		
SEAR Programming	DHCP Configuration	Server *
✓ Display Programming Serial Port	IP Address	192.168.255.81
	Network Mask	
Laptop	Defection of the second	
Port1	Derault Gateway	

Figure 4-178 Display Programming Laptop Ethernet Port

Ethernet Port 1:

This menu allows the user to select options for Ethernet port 1. The user can choose between Disabled and DHCP Client mode. When Disabled, the port has the fixed IP address as default, as shown in the following figure. This screen also allows the user to check the status of the connection.

This port would typically be used when connecting the GCP to a cell modem for remote monitoring.

Configuration	Port1	
Site Configuration GCP Programming 	🔒 Save 🥤 Discard 🏾 🤔 Refresh	Default
▶ SEAR Programming ▼ Display Programming Serial Port	DHCP Configuration Path Type	Disabled *
	IP Address	192.168.2.100
Port1	Network Mask	255.255.255.0
Port2 DNS	Default Gateway	

Figure 4-179 Display Programming Port 1 Ethernet Port

Ethernet Port 2:

This menu allows the user to select options for Ethernet port 1. The user can choose between Disabled and DHCP Client mode. When Disabled, the port has the fixed IP address as default, as shown in the following figure.

Configuration	Port2	
Site Configuration GCP Programming 	🕞 Save 💙 Discard 🍃 Refresh	Default
▶ SEAR Programming ▼ Display Programming Serial Port	DHCP Configuration Path Type	Disabled *
✓ Ethernet Ports	IP Address	192.168.3.100
Port1	Network Mask	255.255.255.0
Port2	Default Gateway	
DNS		

Figure 4-180 Display Programming Port 2 Ethernet Port

DNS:

The DNS menu allows the user to set the IP address of name servers used for the domain name system.

Configuration DNS		
Site Configuration GCP Programming	📊 Save 🧊 Discard 🎽 Refresh	Default
 SEAR Programming Display Programming Serial Port 	Name Server 1 Name Server 2	192.168.2.1
	Name Server 3	192.168.4.1
Port1 Port2 DNS		

Figure 4-181 Display Programming DNS
4.5.7.3.3 Router Settings

The Router Settings page is used when there is a CPU III in the system. This controls the routing of vital ATCS messages from the CPU IIII when vital communication links are used. When the parameter is set here, it is sent to the CPU III and then stored in the CIC, so that the CPU III can read it on boot up, regardless of whether the display module is present.

ATCS IP Field Interface has options of None, Echelon, and Ethernet. The default setting is Echelon. This controls the routing of the vital ATCS messages. If it is set to Echelon, the CPU III will send vital messages out of the Echelon port. If it is set to Ethernet, the CPU III will send vital messages out of the laptop port.

ATCS IP Field UDP Port Number is the Ethernet port number used when the Field interface is set to Ethernet. The default setting is 13000.

The **Route Table Entry timeout** is used by the display module to delete ATCS route entries in the route table if they are no longer used. The settings range is 0 -172800 s, and the default is 400 s.

Configuration	Router Settings		
Site Configuration	ATCS Router		
▶ GCP Programming	🔒 Save 🥤 Discard 🦉 Refresh	Default	
SEAR Programming			
 ▼ Display Programming Serial Port 	ATCS IP FIELD Interface	Echelon *	
	Route Table Entry Timeout	400	
Laptop	ATCS IP FIELD UDP Port Number	12000	
Port1			
Port2			
DNS			
Router Settings			

Figure 4-182 Display Programming Router Settings

4.5.7.3.4 Log Setup

Consolidated Logging

If multiple GCPs are present at a site, the display is able to consolidate the logs for all of these, into one. On the screen shown in the following figure, enter the IP address of the display where the Event log and Diagnostic log are to be stored. These may be stored on separate display modules.

Configuration	Consolidated Logging	
Site Configuration	🔚 Save 🧊 Discard 🦉 Refresh	🛛 💦 Default
 GCP Programming 		
SEAR Programming		
▼ Display Programming Serial Port	Event Log IP Address	0.0.0.0
	Diagnostic Log IP Address	0.0.0.0
Laptop		
Port1		
Port2		
DNS		
Router Settings		
▼ Log Setup		
Consolidated Logging		
Diagnostic Logging		
Log Verbosity Settings		

Figure 4-183 Display Programming Consolidated Logging

Diagnostic Logging

The following options are applicable to the GCP 5000:

EZ/EX Logging: this has the values Change, None, and Periodic. The default setting is Change. This is used to control the logging on the CPU that occurs when a train move is in process.

- If the value is set to Change, a new entry will be added to the log when EZ or EX change by more than the value set by EZ/EX change.
- If the value is set to Periodic, a new entry will be added to the log when EZ or EX change by more than the value set by EZ/EX change, or periodically with an interval set by the EZ/EX Logging Interval (only visible when value is Periodic).
- If the value is set to None, the EZ/EX entry is not logged.

EZ/EX Point Change: the settings range is 1-5 seconds and the default setting is 3 seconds. This is used to set the change needed to log an EZ/EX entry when EZ/EX Logging is set to Change or Periodic.

EZ/EX Logging Interval: the settings range is 1-5 seconds and the default setting is 4 seconds. This is used to set the interval between logging EZ/EX entries, when EZ/EX Logging is set to Periodic.

EZ/EX Recording: the setting options are Enabled or Disabled. The default is Enabled. This is used to turn on the feature where the display continuously stores a record of the EZ/EX, island, and predictor states for each track in a file that can be downloaded as a csv.

The remaining options on the Diagnostic Logging screen, as shown in the following figure, are for Siemens use for diagnostics. They should remain at the default values.

Configuration	Diagnostic Logging	
Site Configuration	📑 Save 💗 Discard 🍯 Refresh	Default
▶ GCP Programming		
 SEAR Programming 		
▼ Display Programming Serial Port	Message Processing (Layer 7)	Disabled *
	Routing (Layer 3)	Disabled *
Laptop	Serial Port 1 RX/TX (Layer 2)	Disabled *
Port1 Port2	EZ/EX Logging	Change *
DNS	EZ/EX Point Change	β
Router Settings	EZ/EX Recording	Enabled *
✓ Log Setup Consolidated Logging	Ethernet Laptop Port RX/TX (Layer 2)	Disabled *
Diagnostic Logging	Ethernet Port 1 RX/TX (Layer 2)	Disabled *
Log Verbosity Settings	Ethernet Port 2 RX/TX (Layer 2)	Disabled *
Security		
Web Server	Echelon RXTX	Disabled *
Display Options	CPU2+ RX/TX	Disabled *
Set to Default		

Figure 4-184 Display Programming Diagnostic Logging

Log Verbosity Settings

This screen is used to set the verbosity (the detail of the logging) of the Diagnostics, CPU, and I/O module logs.

For the CP and I/O modules, the default verbosity is 1, the value should be kept at this unless Siemens requires more detailed log information to diagnose a specific problem.

CP Verbosity: the settings range is 1-2, and the default is 1.

VLP, Slot 1-6, SSCC IIIi Verbosity: the settings range is 1-5, and the default is 1.

The Display Diagnostic Log Verbosity controls the detail of logging to the Display module's display log. The setting options are Basic, Error, Warning, Info, and Debug. The default is Info.

Configuration	Log Verbosity Settings		
Site Configuration	🔚 Save 💙 Discard 🔮 Refresh	l Default	
GCP Programming			
 SEAR Programming 			
✓ Display Programming Serial Port	Display Diagnostic Log √erbosity	Info *	
▼ Ethernet Ports	CP Log Verbosity	1*	
Laptop	VLP Log Verbosity	1*	
Port1 Port2	Slot 2 Log Verbosity	1*	
DNS	Slot 3 Log Verbosity	1*	
Router Settings	Slot 4 Log Verbosity	1*	
✓ Log Setup Consolidated Logging	Slot 5 Log Verbosity	1*	
Diagnostic Logging	Slot 6 Log Verbosity	1*	
Log Verbosity Settings	SSCC3i-1 Log Verbosity		
Security			
Web Server	SSCC3i-2 Log Verbosity	1*	
Display Options	Slot 7 Log Verbosity	1*	
Set to Default			

Figure 4-185 Display Programming Log Verbosity Settings

4.5.7.3.5 Security

The security page allows the user to enable or disable the Maintainer password protection using the Security Enabled field. This defaults to None. When the Security Enabled is set to Maintainer the Maintainer Password field appears and the user can type in the required password.

On returning to this screen, the password cannot be edited unless the correct password is entered. See Section 3.1 for further details.

If security has been enabled, the user will need to enter this password on the local user interface, to be able to edit GCP MCF parameters. Also, the user will need to log into the Web UI with this password, to be able to edit GCP MCF parameters. The user can still log into the Web UI using the default GCP 4000, GCP 5000, or GCP 3000+ password, but the configuration will be set to read only.

Session Inactivity Timeout: The settings range is 5 to 60 minutes, and the default is 20 minutes. This is used to timeout the WebUI if there is no activity on the GCP for the configured time.

Configuration	Security	
Site Configuration	🔚 Save 🍞 Discard 🥳 Refres	sh
 GCP Programming SEAR Programming 	Security Enabled	Maintainer
▼ Display Programming Serial Port	Session Inactivity Timeout	20
✓ Ethernet Ports Laptop		

Figure 4-186 Display Programming Security

4.5.7.3.6 Web Server

This is used to control whether the Web UI uses secure (https) or non-secure (http) access. The default is secure access for Display builds prior to 1.6.0. For display builds after 1.6.0, the default has been set to http.





Figure 4-187 Display Programming Web Server

4.5.7.3.7 Display Options

Display Buzzer Enable: Setting options are Yes, or No, and the default is Yes. This is used to enable or disable the buzzer on the display.

Display Hibernation Time (minutes): The settings range is 5-60, and the default is 15. This is used to darken the display when there has been no activity.

Configuration	Display Options	
Site Configuration	Display	
► GCP Programming	🔒 Save 🍞 Discard 🍯 Refresh	l default
SEAR Programming		
▼ Display Programming Serial Port	Display Buzzer Enable	Yes *
	Display Hibernation Time (Minutes)	15
Laptop		

Figure 4-188 Display Programming Display Options

4.5.7.3.8 Set to Defaults

This setting is used to set the Display parameters back to the default settings. The parameters under GCP and SEAR Programming are unaffected.

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 product as WC CPU3, then select Create New Site.

Configuration Editor			
	📱 Create New Site 🔗 Manage Site 📑 Create RC2 Key		

Figure 4-189 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.

Select MCF :			×
e2box_CPU3001	.mcf	~	🔕 Browse
MCFCRC :			
8EAA9A7F			
Create Site	Cancel		

Figure 4-190 Select WayConneX MCF

NOTE

When creating a new site, the OCE will ask for an 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.

NOTE

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.

Configuration	Configuration Editor		
Configuration Editor	🗐 Create New Site 📀	Manage Site 🙀 Build Config Files	📑 Create RC2 Key
Non-Vital Configuration			
 Vital Configuration 			
· •	Туре	WC CPU3	
	Name	WC1	
	WC CPU3 MCF	e2box_CPU3001.mcf	
	MCF CRC	8EAA9A7F	

Figure 4-191 Configuration Menu

4.6.1 Vital Configuration

The Vital Configuration menu may have many submenus, as shown in the following figure, 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 following figure.

Configuration	Timers		
Configuration Editor	📕 Save 📑 Refresh		
Non-Vital Configuration			
 Vital Configuration 	timer1 (sec)	ē \$	20 *
🔻 Logic Configuration			
Properties	timer2 (sec)	ē	35 *
Timers	timer3 (msec)		1000 *
Module Configuration	time of the set	-	
 Vital Comms Configuration 	timer4 (sec)	\$°	1

Figure 4-192 Timers Menu

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





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



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 the parameters on each screen. Refer to the WayConneX Manual (SIG-00-15-04) for specific details on 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.

Site Configuration			
	🔒 Save 🥳 Refresh 🔥 Default		
	Site Name		
		mysite	
	DOT Number	000000A	*
	Mile Post	000.0	*
	Time Zone	Eastern (GMT-5:00)	*
	ATCS Address	7.620.100.100.03	*

Figure 4-194 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 4-195 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 do not match the standard default values, save these as a template (see section 3.2.5) and use the template for future applications.





Figure 4-196 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 4-197 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 4-198 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 4-199 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 4-200 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 in the following figure. After a few seconds the OCE will show a message indicating build created successfully.

Configuration Edit	tor	•
🔲 Create New Site 🛛 😵	Manage Site 🔛 Build Config Files	🛃 Create RC2 Key
		-
Туре	IVIU PTC GEO	
Name	app1	
Master DB	iCSXPTCDB003.db	
GEO Installation	CSXAMOPAP001	
IVIU MCF	iCSXPTCGE0004.mcf	
MCF CRC	93BEF156	

Figure 4-201 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.

Configuration E	ditor		
Create New Site	⊗ Manage Site 🗱 Build Config File	Config Report Config Report GEO PTC Report	🔹 Create RC2 Key
Туре	IVIU PTC GEO		
Name	app1		
Master DB	iCSXPTCDB003.db]	
GEO Installation	CSXAMOPAP001]	
IVIU MCF	iCSXPTCGE0004.mcf		
MCF CRC	93BEF156		

Figure 4-202 Config Reports Button



WARNING THE CONFIGURATION REPORT MUST BE CHECKED TO ENSURE THAT THE PARAMETERS THAT AFFECT SYSTEM 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.

Unique Check	Numbers	
UCN PTC UCN	: 0x2F60DF49 : 0x1DFB8530	

Figure 4-203 UCN/PTC UCN in Configuration Report

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.

Configuration	Configuration
Configuration Editor Non-Vital Configuration Site Configuration Applications CDL Site Setup 	Configuration Editor Site Configuration GCP Programming SEAR Programming Application (CDL) Digital Inputs
 PTC Communication Log Setup Security Maintainer On Site Set to Default 	Analog inputs Non Vital Outputs Echelon Modules Communications Serial Ports Set to default Display Programming
 Vital Configuration 	

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.

Application (CDL)	
Display Q & A Previous Next	🗶 Start 🛛 — Remove CDL 📄 🏠 Upload CDL
CDL File Name : None	
CDL File:	Browse
	Vpdate

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.

Application (CDL)			
🔳 Display Q & A 🛛 🖣 Pr	evious 🜔 Next	🔏 Start 🛛 🗕 Remove CDL	👍 Upload CDL
CDL File Name : None			
CDL File 9V864-A01P.cd		🔕 Browse	
		Vpdate	

Figure 5-4 Update CDL

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

Application (CDL)			
📃 Display Q & A 🛛 📢 Previous 🕟 Next	🗶 Start	Remove CDL	📩 Upload CDL
CDL File Name : 9V864-A01P.cdl			

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.

Application (CDL)					
🔳 Display Q & A	Previous	Next	*Restart	Remove CDL	🟦 Upload CDL
CDL File Name : 9V	864-A01P.cdl		l		
4					
	IBER?		1		
CROSSING CON	NFIGURATION?		NORMAL		
🛹 AND1 USED AS	XR?		NO		
🛹 AND2 USED AS	XR?		NO		
🛹 AND3 USED AS	XR?		NO		
🛷 AND4 USED AS	XR?		NO		
🛹 AND5 USED AS	XR?		NO		
AND6 USED AS	XR?		NO		
🗸 AND7 USED AS	XR?		NO		

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.

Configuration	Operational Parameters	
Configuration Editor	🖥 Save 🦉 Refresh	
 Non-Vital Configuration Site Configuration 	Diagnostic Alerts	No
 Applications 	Send Alerts on Low Battery	No
▼ CDL Site Setup	Low-Battery Threshold	9
Operational Parameters	Send Alerts on High CPU Temperature	No
 Communication 	Normal CPU Temp Threshold	90
▶ Log Setup Security	Num 1	No
Set to Default	Num 2	No
 Vital Configuration 	Num 3	No

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.

General				
📃 Save 🛛 🥰 Refresh 💦 Default				
PTC Enable GEOs	Yes 🔽			
Console as NV Logic Ctrlr	No 🗸 🖈			
Log GEO Events	Yes			
Sync GEO and SEAR Clocks	No 🗸 🖈			
WIU Channel Enabled	TC Yes 🗸 🗡			
Send Msg on Change of State	Yes 🗸			
Msg Timeout (Minutes)	¥ 5			
Msg Update Rate (ms)	¥ 1500			

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.

Emp	
📕 Save 🔮 Refresh 🚺 Default	t
WIU Addr	7.620.100.100.05 *
EMP Msg Ver	0 *
EMP Src Addr	*
EMP Dst Addr	*
Bcn Msg TTL	12 *
Stat Rsp TTL	12 *
Bcn Msg QOS	0*
Stat Rsp QOS	0*
HMAC Key	00000000000000000000000000000000
RC2 Key	CRC:FCCB5207
RC2 Key Confirmation	•••••

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.

Class C&D Messages			
🔒 Save 🛛 🥰 Refresh 🔡 Default			
Class C Multicast IP Addr	239.255.0.5 *		
Class C Multicast Port	32768 *		
Class D Mode	Bi-Directional		
Primary GW Srvr IP Addr	10.255.255.210 *		
Primary GW Srvr Port	3001 *		
Log Traffic	No		
Keep Alive Interval (ms)	30000		
Keep Alive Ack Timeout (ms)	30000 *		
Acknowledgement Timeout (ms)	15000 *		
NAK Retry Count	3*		
Retransmit Delay (ms)	0 *		

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

Class C&D Messages		
🗐 Save 🔮 Refresh 🚺 Default		
Acknowledgement Timeout (ms)	15000 *	
NAK Retry Count	3	
Retransmit Delay (ms)	0 *	
Connect Attempt Timeout (ms)	30000 *	
Connect Attempt Delay (mc)		
Connect Attempt Delay (ms)	*	
Connect Attempt Retry Count	-1*	
Reconn. Attempt Retry Limit	-1 *	
Data ACK Enable	Yes 🗸 🖌	
Data ACK Timeout (ms)	15000 *	
TCP Connection Retry Timer (ms)	250 *	

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**.

Beacon Message	Beacon Message			
🔒 Save 🖉 Refresh 💽 Default	🔚 Save 🏾 🍯 Refresh 💽 Default			
Broadcast on Change No * Broadcast Rate (ms) 1000 * Beacon Continuous	Broadcast on Change Broadcast Rate (ms) Beacon Continuous	No ✓* 1000 *		
	Beacon Bit Time (Seconds)	300		
	Beacon End Time (Seconds)	120		
	Max Beacon Interval Enabled	Yes		
	Max Beacon Interval (Seconds)	900		

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.

Time Source		WIU Time Source	NTP
📑 Save 🦉 Refresh 🚺 Default		Time Mana Defee Contine MICM	
WIU Time Source	EMP 🗸	No Time Sync Wessage (Williaces)	<u>6</u> *
Time Msgs Before Sending WSM	5 *	NTP Mode	Unicast 🗸
Time Message Deviation (Seconds)	1*	Primary NTP Time Source	pool.ntp.org
Ignored Time Difference (Seconds)	3	Backup NTP Time Source	
Max Seconds Time Change (Seconds)	3*	NTP Multicast Address	
Max Time Change within Minutes (Minutes)	60 *	NTP UDP Port	123
LRM Max Seconds Time Difference (Seconds)	3	NTP Polling Rate (Minutes)	60
No Time Sync Message (Minutes)	6*	NTP Wait Time (Seconds)	120

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.

Pref Time Source	Pref Time Source				
🔜 Save 🦉 Refresh 🛃 Default	🔒 Save 🍠 Refresh 💽 Default				
EMP Pref-Timesrc Enabled	EMP Pref-Timesrc Enabled	Yes			
	Sync Timeout	0			
	Priority 1 Enabled	No			
	Priority 1 EMP Address				
	Priority 2 Enabled	No			
	Priority 2 EMP Address				
	Priority 3 Enabled	No			
	Priority 3 EMP Address				
	Priority 4 Enabled	No			
	Priority 4 EMP Address				
	Priority 5 Enabled	No			

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

High Availability	
📙 Save 🛛 🍠 Refresh 🔹 Default	
HA Enabled	No v *
High Availability	
🔚 Save 📑 Refresh 🔒 Default)
HA Enabled	Yes 🔻
HA Link 1 IP Address	
1- IP Port	12000
1- Idle Timeout	0
1- Idle Enabled	No 🔻
HA Link 2 IP Address	
2- IP Port	12000
2- Idle Timeout	0
2- Idle Enabled	No
HA Link 3 IP Address	
3- IP Port	12000

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 following figure, 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.

Installation Name: CSXWELAWRENCE002									
Signal								1	
Site DeviceID	Signal	Geo Subnode	Track Name	Direction	Milepost	Subdivision Number	Site Name	Description	Include
SIG_2	SIG_2	3	Not Set	Increasing 🗸	000.0	Not Set	app		
SIG_6	SIG_6	3	Not Set	Increasing 🗸	000.0	Not Set	app		
SIG_4	SIG_4	3	Not Set	Increasing 🗸 🗸	000.0	Not Set	app		
Switch									
Site DeviceID	Switch	Geo Subnode	Track Name	Direction	Milepost	Subdivision Number	Site Name	Description	Include
HSW	нsw	3	Not Set	LF 🗸	000.0	Not Set	app		

Figure 5-20 PTC Configuration - Device Attributes



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.

Aspects			
Aspect ID	GEO Aspect	PTC Aspect Name	PTC Aspect Code
1	CLEAR	Clear	3
2	SLOW CLEAR	Slow Clear	24
3	SLOW APPROACH	Slow Approach	20
4	APPROACH1	Approach	8
5	APPROACH2	Approach	8
6	RESTRICTING	Restricting	13
7	STOP	Stop	15

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.





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.

This page intentionally left blank

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.

Configuration	Maintenance
Maintenance	
Aspect Looka File Manager GCP Build Se PTC Class D	up r ettings) Tests

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 following figure 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

SIEMENS			Wetcone Admin Logout	
Configuration Configuration				
Configuration		files selected, Do you want to select	the Aspectlookup tables? V Select	
	No Aspectitoskup talen files selectind. Do you warf to select the Aspectitook Type MULTIC BED Name Master DD Select Master DB Company CD Installation Company AUL MCF MULTIC CE	o tates? 2 Notice	A	
		Aspect Lookup	D	В
© Copylight 2014 Servena. All fig		Select aspect lookup file : Select PTC aspect values file :	AspectLookupTable.CSX.1.bt	C
			le selected, please select available file and save	

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.

Configuration			
Maintenance AspectLokup File Manager	File Manager	File Manager	
		📤 Export Files 🛃 Import Files	🔀 Remove Template 🗍
			J

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 following figure.

File Manager		
Export Files	a Import Files 🔀 Rei	move Template
	Opening oceconfig_files_08-08-20 You have chosen to open: Coreconfig_files_08-08-20 which is: ZIP archive (1.4 N from: http://localhost:9090 What should Firefox do with thi Open with PeaZip, file DownThemAll! dTa OneClick!	14_130628.zip 14_130628.zip AB) s file? and archive manager (default) C:\Users\ c.\Users\ OK Cancel

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.

File Manager	r							
📤 Export Files	🛃 Import Files	🗙 Remove Template						
		😻 File Upload 🎯 🔊 🎍 + Computer + New Volume (E) +	A In_Progress + OCE New + TestBuilds +		• 49	Search TestBuilds		×
		Organize - New folder				JH •	- 63	
		Favorites Downloads Recent Places Desktop Destrop	Name CP Central CP Color CP Safetran CP TechPubs2 CP 50	Date modified 7/15/2014 12:28 PM 7/15/2014 12:28 PM 11/4/2011 12:59 PM 7/15/2014 12:28 PM 7/15/2014 12:28 PM	Type File folder File folder File folder File folder	Size		
		Music	CP TechPubs2	10/25/2014 12:22 PM	ZIP archive	701 KB		
		Pictures Videos Videos Computer Computer	EGEONSCL003	6/21/2011 5:58 PM 6/21/2011 5:58 PM	Text Document MCF File	1 KB 295 KB		
		New Volume (E)						
		28 405 (Macount) (F)	*					_
		File name: CP TechPubs2			- [All Files Open	Cancel	

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.

Configuration Maintenance		
Maintenance	File Manager	
Aspect Lookup File Manager	Indicates iVIU and VIU emplates have been created	Remove Template
	Current VIU Non Vital Do you want to contin	CPU-III I configuration template will be delete. nue?
	File	ок Cancel e Manager
		Export Files 🛃 Import Files 🔀 Remove Templat

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 in the following figure). 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.

Maintenance	GCP Build Settings		
Aspect Lookup	Save		
File Manager			
	Output build path * :	C:\Siemens\OCE\Workspace	
	Select reports to be include	Select reports to be included in zip file:	
	Select All :		
	Configuration Report :		
	Programming Report :		
	Min Programming Report :		
	Template Report :		
	Relay Logic :		

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.

Maintenance	PTC Class D Tests	
Aspect Lookup	📕 Save 🛛 👺 Refresh 🔃 Defa	uit
File Manager GCP Build Settings	Test Server IP Address	192.168.1.110 *
PTC Class D Tests	Test Server UDP Port	12100 *
	Test Frame Count	10 *
	Test Messages Enabled	No
	Test Result Logging Enabled	Yes 🗸
	Starting Comm ID	1000000

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 following figure. The OCE Welcome screen will appear when the logout is completed.

SIEMENS Contraction Contraction Configuration Configuration Configuration]	Welcone Acrin Expect		
		Welcome Admin	Logout	
Capyoff 2016 Serves Alapht ose	ue	SIEMENS		
		Welcome to oce		

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 following figure.



Figure 7-2 Shutting Down the OCE Server