Software Transition Plan

for the

General Purpose Automatic Test Systems

Common Instrument Controller

B973048

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Approvals

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Tailoring

This document is written in accordance with the Data Item Description (DID) DI-IPSC-81429A. This DID is tailored as follows:

None.

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# SCOPE

## IDENTIFICATION

This document applies to the computer software developed for the General Purpose Automatic Test Systems Common Instrument Controller (GPATS CIC) development program; contract number W15QKN‑14‑D‑0075. The software discussed herein relates only to the system software required for the operation and maintenance of the legacy VIPER/T and TETS test stations utilizing the newly designed Common Interface Controller; heretofore this system and its software will be referred to as GPATS CIC, or simply CIC.

## SYSTEM OVERVIEW

The VIPER/T and TETS test systems are portable testers designed to detect and diagnose faults for a wide variety of line-replaceable units (LRU) and circuit card assemblies (CCA). The GPATS CIC is meant to replace the system controller laptop and docking station used on both of these test systems; specifically included are the TETS RF (AN/USM-657B(V)2), VIPER/T RF (AN/USM-717(V)2)and VIPER/T EO (AN/USM-717(V)3) systems. The GPATS CIC replaces the legacy system controller laptop and docking station, and the test asset circuit card assemblies contained in the legacy docking station have been newly selected for inclusion in the CIC computer. The specific hardware components of the system controller being replaced are the: Instrument Controller computer, the video capture CCA, the 1553 CCA, and the serial interface CCA. A new CAN bus interface CCA and a Quad port Ethernet CCA are being added. The MXI-2 interface and GPIB-488 circuit card assemblies will also continue to reside in the controller and will remain identical to those used in the legacy system controller. The following chart lists the specific manufacturers and part numbers for the assets:

|  |  |  |
| --- | --- | --- |
| **Asset** | **Common Interface Controller** | **VIPER/T Legacy Controller** |
| **Instrument Controller Computer** | PICMG 1.3 SBC with i7 processor in a “Lunchbox” style computer | Pentium M processor in a Laptop computer |
| **Gigabit Ethernet CCA** | Intel  i350-T4V2 | SBS Technologies  PMC-Gigabit-DT2 |
| **Serial CCA (232, 422, 485)** | Sea Level Systems  7404-2268-ET | Sea Level Systems  5102 |
| **CAN CCA** | TEWS Technology  TPMC806-10 | N/A (was in the VXI Carrier) |
| **1553 CCA** | Ballard  Lx1553-5/1MT | Data Device Corporation  BU-65569i1-300 |
| **Video Capture CCA** | Epix  PIXCI-A310 | Dalsa  PC2-Vision |
| **GPIB-488 CCA** | National Instruments  778032-01 | National Instruments  778032-01 |
| **MXI-2 CCA** | National Instruments  777185-01 | National Instruments  777185-01 |

Figure 1 – Controller Asset Comparison

Note that the operating system software used with the legacy controller was Windows XP. This software is now obsolete, and the GPATS CIC contract specifies Windows 7 – 64 bit as the required OS.

The GPATS CIC will be operated in conjunction with the legacy VIPER/T and TETS VXI hardware, ancillary equipment, and the power supplies in their current configuration. The GPATS CIC will control the hardware in a manner that is functionally identical to the legacy controller. The GPATS CIC system software will continue to allow operation of the test assets in both manual and automated modes. The system software will also continue to incorporate startup sequencing, runtime system monitors, confidence and self tests, system logs and a fault history database. The CICL communication layer will be implemented in the GPATS CIC system software for those same test assets as were implemented in the VIPER/T system software. The system source code for both the TETS and VIPER/T systems will be merged into a single software source tree, and a software program will be developed to determine and install the appropriate software items when creating an operational system.

The test station hardware is operated via the GPATS CIC, which is a ruggedized lunchbox style chassis having a PICMG 1.3 specification single board computer. All CIC software executes on this computer. The computer uses a Microsoft Windows 10 – 64 bit operating system. The menus, stand-alone instrument software, and system utility programs are written and compiled using the Microsoft Visual Basic.NET and Visual C/C++ languages. Automated Test Program Set (TPS) software is written and compiled using TYX PAWS Developer’s Studio and the Abbreviated Test Language for All Systems (ATLAS) language. The ATLAS code may also call Non-ATLAS Modules (NAMs) that are written with Visual C. The TPSs will run on the CIC under the PAWS Run-Time System. As the original Visual Studio 6 Integrated Development Environment (IDE) used to develop and maintain the legacy software is now obsolete, all of the system software will be transferred to and compiled with Visual Studio 2012.

Please note that Astronics Test Systems has complete and intimate knowledge of the VIPER/T and TETS legacy systems and software, to wit: in 2005, DME Corporation won the contract for development and production of an upgraded TETS (now known as VIPER/T). In 2010, DME Corporation was purchased, and became a wholly owned subsidiary of Astronics Corporation, and thus became known as Astronics DME Corporation. In 2014, Astronics Corporation purchased EADS - North America, who was instrumental in the development of the software used on the original VIPER/T program. Astronics DME and EADS then joined together to become Astronics Test Systems. Finally, in 2015, Astronics Test Systems secured the contract for development and production of the GPATS CIC.

## DOCUMENT OVERVIEW

This document identifies the hardware, software, and other resources necessary to provide life cycle support for the GPATS CIC software. This document and the GPATS CIC software are UNCLASSIFIED.

## RELATIONSHIP TO OTHER PLANS

An additional document that details the software development effort is the Software Development Plan, document number B973046.

# REFERENCED DOCUMENTS

|  |  |  |
| --- | --- | --- |
|  |  |  |
| B973049 (K002)  Latest Release |  | Software Product Specification for the General Purpose Automatic Test Systems Common Instrument Controller (GPATS-CIC) |
|  |  |  |
| B973051 (K003)  Latest Release |  | Software Version Description for the General Purpose Automatic Test Systems Common Instrument Controller (GPATS-CIC) |

# 

# Software support resources

This section describes the resources needed to support the GPATS-CIC software.

## Facilities

No special facilities are required.

## Hardware

The task of maintaining the GPATS-CIC software consists of two parts: 1) Maintenance of the GPATS-CIC operational software, and 2) Maintenance of the GPATS-CIC ATLAS Test Program Sets and support files. Five hardware systems are required to build and completely verify the system software:

1. A GPATS-CIC Operational Software Development System (OSDS)
2. A GPATS-CIC “Gold” Instrument Controller
3. A TETS RF (AN/USM-657(V)2) complete system
4. A VIPER/T RF (AN/USM-717(V)2) complete system
5. A VIPER/T EO (AN/USM-717(V)3) complete system

The first hardware system is a standard Personal Computer, suitably equipped with software as per paragraph 3.3 below. This PC contains an exact image of the target field software load and is used to make the software installation image for the field. The second hardware system is a GPATS-CIC Instrument Controller. The gold system image is normally created (see section 3.3.2) while the GPATS-CIC computer is connected to one of the three test system configurations (numbers 3, 4, and 5 above), however it does not matter which of the three systems is used. These three operational test system configurations are also used to validate the image created on the “Gold” instrument controller.

## Software

Life-cycle support of the VIPER/T-MNG software entails maintenance of the operational software. This requires a computer (OSDS) with the appropriate software development environment (Visual Studio 2012) and a “Gold” Instrument Controller for validation and field image creation.

### Operational Software Development Station (OSDS) Creation

The software items needed to create the Operational Software Development Station (OSDS) for the VIPER/T-MNG are listed in the following table:

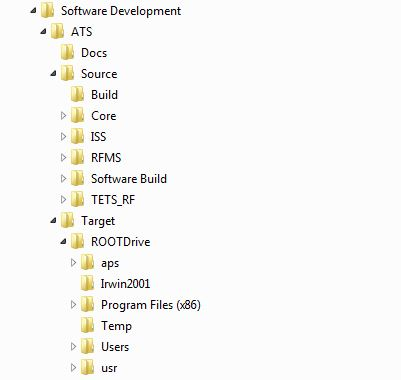
| **Software Item** | **Manufacturer** | **Version** |
| --- | --- | --- |
| Windows | Microsoft | Windows 10 – 64 bit |
| Microsoft Visual Studio | Microsoft | 2012 Professional, with update 4 |
| Install Shield 2015 | Microsoft | 2015 Limited Edition |
| Measurement Studio | NI | 2015 |
| LabWindows/CVI | NI | 2015 |
| VISA  ImgBurn(see 3.3.1.1 step 8) | NI  Lightning UK | 18.0.0  2.5.8.0 |
| System Source Code DVD | ATS | Latest Revision |
| COTS Installs DVD | ATS | Latest Revision |

#### Operational Software Development Station (OSDS) Software Installation Procedure

The following procedure instructs the user on how to create a development station with the necessary software for building the VIPER/T-MNG executables. A World Wide Web Ethernet connection is required to complete the below actions. Administrative permissions will be required to perform these steps due to the requirement to install various software packages and register files and services. If prompted for licensing, enter appropriate codes where applicable.

1. If required, install the Windows 10 – 64 bit Operating system software onto computer to be used as the OSDS.
2. Install Visual Studio version 2012 (With update 4)
   1. Accept all license agreements
   2. Accept all other defaults
   3. Click “Launch” after install completes
   4. Select “General Development Settings” when prompted to choose default environment settings, then click “Start Visual Studio”
   5. Close Visual Studio 2012
   6. Install the Visual Studio Update 4, and accept all defaults and license agreements (Note: This is freely available online to all licensed users of VS2012)
3. Install "Install Shield 2015 Limited Edition"
   1. This is freely available online to all licensed users of VS2012 used in #2 above.
4. Install Measurement Studio 2015
   1. When prompted at the “Product List” window, select install for the “Measurement Studio 2015 for Visual Studio 2012” selection
   2. When prompted to install NI Device Drivers, click “No”
   3. Deselect checkbox for Product Notifications
   4. Accept all license agreements and all other defaults
5. Install Labwindows/CVI version 2015
   1. Allow .NET Framework 4.5.2 to install
   2. Enter appropriate User Information when prompted
   3. Deselect checkbox for Product Notifications
   4. Accept all license agreements
   5. Accept all other defaults
   6. Click “Later” when prompted to install NI Device Drivers
   7. Allow the Windows SDK to install, and accept all defaults
   8. Restart when prompted
   9. Click “Cancel” at NI Product Registration prompt
6. Install NI Visa version 18.0.0
   1. Allow .NET Framework 4.6.2 to install
   2. In the “Features” prompt, select “Development Support”, ensure all options are selected, and also select “.NET 4.0 Development Support”, and “Install this feature and its sub features to a local drive”
   3. Deselect checkbox for Product Notifications
   4. Accept all license agreements
   5. Accept all other defaults and install all device software if/when prompted
7. Install Measurement Studio Legacy MFC Support using Astronics provided COTS Installs Optical Media (file name: MStudioVS2012CppLegacyR1Professional.exe)
   1. Install the COTS Installs DVD
   2. Using Windows Explorer, navigate to \OSDS Tools\ Measurement Studio Legacy MFC Support
   3. Run MStudioVS2012CppLegacyR1Professional.exe
   4. When prompted for password, use “4DA22BA19B”
8. Install the Pre-Build Dependencies using Astronics provided COTS Installs Optical Media (Requires Administrator privilege)
   1. Click “Start Menu” → “Accessories”
   2. Right click “Command Prompt” and select “Run as Administrator”
   3. Click “Yes” at the User Account Control window if prompted
   4. Change to the drive containing the COTS Installs DVD (e.g. “D:”)
   5. Change directory to \OSDS Tools\PreBuildDependencies
   6. Run “Register.bat”, and click “OK” at the Regsvr32 window prompt
9. If desired, install the ImgBurn (or equivalent software) in preparation for ESR creation. This software is included on the GPATS-CIC COTS Installs DVD (GPATS-CIC CIP).
   1. This software is only needed for ESR creation. ESR creation may take place on a computer that is not the OSDS, in which case the installation of this software is not required for the OSDS. ESR creation computer need only have an available USB port, Dual Layer DVD write capability, and software capable of creating a bootable DVD. Section 3.3.3 step 12 details the procedure to create the bootable ESR. If installation is desired, complete steps b and c.
   2. Run \OSDS Tools\Imgburn\SetupImgBurn\_2.5.8.0.exe
   3. Accept all defaults and licenses during installation
10. Copy GPATS-CIC (ATS) software source onto the OSDS
    1. Create directory “[rootdrive]:\Software Development\ATS” on the OSDS
    2. Copy the entire software source code directory and subdirectories from the System Source Code DVD into the “[rootdrive]:\Software Development\ATS” on the OSDS.
    3. Right click the folder “[rootdrive]:\Software Development” on the OSDS, and select [properties]
    4. Uncheck “Read Only”
    5. Apply to all subfolders

The resulting file structure should look as follows:



1. Run VS2012 as administrator
   1. Open “Start-Menu”, then expand “All Programs→Microsoft Visual Studio 2012”, then right click “Microsoft Visual Studio 2012” and select “Run as administrator”. Click “Yes” at the User Account Control window if prompted. Open the “ALL\_CIC” project by clicking the “File→Open→Project/Solution” and then navigating to “C:\Software Development\ATS\Source\Software Build” and select the “ALL\_CIC” solution.
   2. Activate/Register your copy of InstallShield
   3. In the VS2012 Solution Explorer window, expand the “ALL\_CIC” project. Then, expand the “2 Specify Application Data”. Then, right click “Redistributables” and select “Open”.
   4. In the “InstallShield Prerequisistes” window, scroll to “Windows Installer 3.1 (x86)”, left click it to select it, and then right click it and select “Download All Required Items…”. Wait for the download to complete.
   5. Close Visual Studio 2012

The system software is now installed in an appropriate development environment and ready for compilation and build.

#### Operational Software Development Station (OSDS) Software Build Procedure

The following procedure instructs the user how to build the source code and create the installation programs using the OSDS created in section 3.3.1.1 above. The user may find it helpful to acquire the latest revisions of the Software Version Description Document and/or the Software Product Specification for the GPATS-CIC system software. These are document numbers B973051 and B973049, respectively.

Goal:

To create these two media:

-System Source Code, part number 93006H0041

-System Software Release, Emergency Software Recovery DVDs, part number 93006H0042

Materials:

- Development Station Computer as created in section 3.3.1.1

- Current release of GPATS-CIC System Source Code Disk

- DVD burner

Software Modification and Build Procedure Diagram:



##### Creating a New GPATS-CIC Software Version

1. Make any desired changes to the source files.
2. Using File Manager navigate to the

“C:\Software Development\ATS\Target\ROOTDrive\Users\Public\Documents\ATS” directory.

1. Open “ATS.ini” file. Change the software revision number to match the revision being produced. This number appears as “SWR=”
2. Save and Close “ATS.ini”
3. Make the same edit specified above to the ATS.ini files in the following locations as well:

* “C:\Software Development\ATS\Target\ROOTDrive\Program File (x86)\ATS\ISS\config\Station\_Configuration\_Files\TETS\_CONFIG\_FILES” directory.
* “C:\Software Development\ATS\Target\ROOTDrive\Program File (x86)\ATS\ISS\config\Station\_Configuration\_Files\VIPERT\_EO\_CONFIG\_FILES” directory.
* “C:\Software Development\ATS\Target\ROOTDrive\Program File (x86)\ATS\ISS\config\Station\_Configuration\_Files\ VIPERT\_RF\_CONFIG\_FILES” directory.

1. Run VS2012
   1. Open “Start-Menu”, then expand “All Programs→Microsoft Visual Studio 2012”, then click “Microsoft Visual Studio 2012”. Open the “ALL\_CIC” project by clicking the “File→Open→Project/Solution” and then navigating to “C:\Software Development\ATS\Source\Software Build” and select the “ALL\_CIC” solution.
2. In the VS2012 Solution Explorer window, expand the “ATS\_Installer” project. Then, expand the “1 Organize Your Setup”. Then, double click “General Information”.
3. Edit the “Product Version” to reflect the newly created version number. Note that this version information may only contain numbers and decimal points. Letters are not allowed.

##### Building the GPATS-CIC Executables using the OSDS

1. Run VS2012
   1. Open “Start-Menu”, then expand “All Programs→Microsoft Visual Studio 2012”, then click “Microsoft Visual Studio 2012”. Open the “ALL\_CIC” project by clicking the “File→Open→Project/Solution” and then navigating to “C:\Software Development\ATS\Source\Software Build” and select the “ALL\_CIC” solution.
2. In the VS2012 “Build” menu, and select “Configuration Manager”. Ensure that the “Active Configuration Solution” drop down menu has the “Release” option selected. Click “Close” to close the “Configuration Manager” screen.
3. In the VS2012 “Build” menu, and select “Rebuild Solution”. Wait for the build process to complete and verify that the information shown at the bottom of the VS2012 GUI states “Rebuild All succeeded”.
4. Close the VS2012 IDE. There is now a “**setup.exe**” file in the “C:\Software Development\ATS\Target\Express\SingleImage\DiskImages\Disk1” directory. The GPATS-CIC executables have now been built and are included in the “setup.exe” installer executable.
5. Copy the “C:\Software Development\ATS\Target\Express\SingleImage\DiskImages\Disk1” directory and its contents to media for use when installing the new GPATS-CIC executables onto a system controller. This media will be utilized in the Gold Instrument Controller System Creation (section 3.3.2) below.

### “Gold” Instrument Controller System Creation

| **Software Item** | **Manufacturer** | **Version** |
| --- | --- | --- |
| Windows 10 Pro 64-bit DVD | Microsoft | 1803 (Build: 17134.1) |
| Windows 7 System Recovery CD | ChassisPlans | OEM Win7Pro disc |
| Windows 7 System Image DVDs | ChassisPlans | OEM Win7Pro discs |
| CIC Pre-Builts Disk 1 Win7 DVD | Astronics | Current release v2.0.0.0 |
| CIC COTS Install Programs DVD | Astronics | Win10 Study disc (new) |
|  |  |  |
| Windows 10 System Recovery CD | Astronics | Win10 Study disc (new) |
| Windows 10 System Image DVD | Astronics | Win10 Study disc (new) |
| BIOS SHB130 H2.00 Flashdrive | Astronics | Win10 Study drive (new) |
| Windows 10 Enterprise | Microsoft | 1803 (SHB) |

| **Hardware Item** | **Manufacturer** | **S/N** |
| --- | --- | --- |
| Controller | Astronics | various |
| Portable USB CD/DL-DVD Writer | various |  |

#### Windows 7 Pro Baseline

The target controller for the “Gold” system build must be at or restored to an activated Windows 7 Pro Baseline. This baseline can be satisfied by installation of GPATS-CIC ESR system image or the OEM (Chassis Plans) System image.

#### Windows 10 Pro Upgrade

This section will “upgrade” the controller to Windows 10 and convert the Windows license key

1. Load the “Win10\_1803\_English\_x64” DVD
   1. Run as Administrator setup.exe

Windows 10 Setup

1. Get important updates
   1. Click “Not right now”
   2. Confirm uncheck “I want to help make…”
   3. Click “Next”
2. Applicable notices and license terms
   1. Accept
3. Ready to Install
   1. Click “Change What to Keep”
   2. Click “Nothing”
   3. Click “Next”
   4. Click “Install” this should take ~ 20 mins
4. Windows 10 OOBE

Display resolution will be incorrectly low, just push through

* 1. Region –US, click “Yes”
  2. Keyboard –US, click “Yes”
  3. 2nd keyboard – skip
  4. Connect to network –skip
  5. 1st User Account “ATEP”
  6. Set Password –skip
  7. Make Cortana your assistant – No
  8. Turn OFF all 7 Privacy Settings
  9. After arriving at desktop screen, set display to native resolution: 1280x1024, scale: 100%
  10. Connect controller to isolated LAN (internet)
  11. Open Control Panel
      1. Select System and Security
      2. Select System
      3. Scroll to bottom
         1. At firewall pop up select “Work” network discovery and click “Yes”
      4. While monitoring, Windows should auto-Activate within 30 secs indicate using Digital License
         1. If it doesn’t show up try relaunching
      5. Disconnect controller from LAN
      6. Remove DVD
      7. Close All Screens

1. Shutdown Computer

#### BIOS Update and Configuration

This section will load new BIOS and setup BIOS for Secure Boot and TPM. Secure Boot mode can only be turned on prior to a clean Windows install.

BIOS Update H2.00 10/29/2018

Familiarize yourself with the two BIOS documents on the COTS install disk at \COTS\Axiom Tek\BIOS\ before proceeding.

1. Prepare USB Flash drive (FAT32, <32GB) with BIOS SHB 130 H2.00 as outlined in above referenced documents or use the Astronics provided Flash drive.
2. Insert BIOS flash drive into controllers USB port
3. Power up controller and <DEL> key at prompt to enter BIOS setup menu.
   1. Go to Boot tab
      1. Select Hard Drive BBS Priorities
      2. Change Boot Option 1 to Generic Flash Disk 8.07
      3. Hit the Esc key
   2. Go to Save and Exit tab
      1. Choose Generic Flash Disk 8.07
   3. At DOS prompt C:\>
      1. Type cd axiomtek
   4. At DOS prompt C:\AXIOMTEK>
      1. Type prog.bat
   5. Display list will show FPT Operation Passed
4. Manually shutdown controller.
5. Wait at least 30 seconds then power up controller again and go into BIOS by hitting <DEL> key
6. Boot override into flash drive again and hit Enter
   1. At DOS prompt C:>\
      1. Type cd axiomtek
   2. At DOS prompt C:\AXIOMTEK>
      1. Type meinfo and press Enter. Wait for the utility to complete.
      2. Confirm absence of any communication warnings at end of listing.
7. Manually shutdown down controller
8. Remove flash drive

BIOS Update H2.00 Setup

1. Load BIOS optimal Defaults
   1. Turn on IC power
   2. Press <DEL> key to enter BIOS (SHB 130 H2.00)
   3. Enter Admin password, if prompted
   4. Go to Save and Exit tab
      1. Select “Restore Defaults”
      2. Select “Yes” at the confirmation screen
      3. Select “Save Changes and Reset”
      4. Select “Yes” at the confirmation screen
   5. On IC restart press <DEL> key to enter BIOS menu again
2. Configure BIOS settings
   1. Go to Advanced tab
      1. Select “Trusted Computing”
         1. Confirm “Security Device Support” is set Enabled
         2. Select “TPM State” and set to Enabled
         3. Note the current configuration

TPM Enabled Status: Disabled

TPM Active Status: Deactivated

TPM Owner Status: Unowned

* + - 1. Press <Esc> to return to Advanced tab
    1. Select “CPU Configuration”
       1. Select “Intel Virtualization”
       2. Disable it
    2. Select “AMT Configuration”
       1. Select “Intel AMT” and set to Disable
       2. Press <Esc> to return to Advanced tab
    3. Select “NCT6106D Super IO Configuration”
       1. For serial ports 2thru 5 and Parallel port select each and disable
       2. Press <Esc> key to return to Advanced tab
  1. Go to “Boot” tab
     1. Select “Boot Option 1” and set it to “P0: INTEL SSDSC2BB1…”
     2. Select “Boot Option 2” and set it to “P1: DV-W28SS-B …”
  2. Go to “Security” tab
     1. Select Administrator
        1. Set Administrator password (twice)
     2. Select “Secure Boot”
        1. Note: Platform Mode Setup

Secure Boot Disabled

* + - 1. Confirm Secure Boot Control is already Enabled
      2. Select “Secure Boot Mode” and set to Custom
      3. Select “Key Management”
         1. Select “Factory Default Key Provisioning” and set to Enabled
         2. Select “Install All Factory Default Keys” and press <Enter>, Yes
         3. Confirm PK, KEK, DB, and DBX all indicate “Installed”
         4. Press <ESC> key to return to Security Tab
      4. Select “Image Execution Policy” and press <Enter>
         1. Select “Removable Media” and set to Always Execute
         2. Press <ESC> to return to Security Tab
      5. Select “Secure Boot Mode” and set to Standard
         1. Note: Platform Mode User

Secure Boot Enabled

* + - 1. Press <ESC> key to return to main screen
    1. Go to “Save and Exit” Tab
       1. Select “Save Changes and Reset” and press <Enter> key and then “Yes”
    2. Press <DEL> key to reenter the BIOS

Note: The resolution switches to 640x480

* + - 1. Go to “Advanced” Tab
         1. Select “Trusted Computing”

Confirm “Pending Operation” is set to None

Note: Current Status Configuration

TPM Enabled Status: Enabled

TPM Active Status: **Activated**

TPM Owner Status: Unowned

Then press <ESC> key to return to Advanced Tab

* + - * 1. Select “AMI Graphic Output Protocol Policy”

Confirm New Category

Intel Haswell Graphics Controller

Intel GOP Driver 5.0.1025

Then press <ESC> key to return to Advanced Tab

* + - * 1. Select “PCH-FW Configuration” to view ME FW version update

ME FW Version 9.1.41.3024

Then press <ESC> key to return to Advanced Tab

* + - 1. Go to “Save and Exit” Tab
         1. Select “Save Changes and Reset” and then press <ENTER> key and “Yes” to reset
    1. Press <DEL> key to reenter the BIOS
    2. Load the “Win 10\_1803\_English\_x64” DVD
    3. Force controller SHUTDOWN via front panel power switch

**Windows 10 Pro Clean Install**

This section will clean hard-drive, convert hard-drive from legacy MBR partition structure to modern UEFI (GPT) partition structure and install Windows 10 from scratch. The previous upgrade was needed to convert the license and this clean install is for activating Secure Boot.

1. Windows 10 - Clean Install (Build continuation, approx. 15 min)
   1. Power-up controller.
   2. Press <DEL> to enter the BIOS and login
   3. Go to “Save and Exit” Tab
   4. Select “UEFI: DV-W28SS-B” in the “Boot Override” section and press <Enter> key.
   5. Press any key when prompted to boot from the DVD

* Click “Next” to select US language preference
* Click “Install Now”
* Click “I don’t have a product key”
* Select “Windows 10 Enterprise x64 10/29/2018”, Next
* Accept license terms, Next
* Custom: Install Windows Only (advanced)
* Delete ALL partitions, then Refresh, then New
* Click Apply, OK to accept initial default partitions
  + Note:

Partition 1: Recovery 499.0 MB Recovery

Partition 2 100.0 MB System

Partition 3 16.0 MB MSR (Reserved)

Partition 4 111.2 GB *or larger* Primary

* Next (installing Windows, may restart several times)
  1. Proceed with Windows OOBE setup
* Region – US, Yes
* Keyboard Layout – US, Yes
* 2nd Keyboard – Skip
* Connect to Network – Skip for now
* Connect now to save time later- No
* 1st User account – ATEP
* Set Password, Next *(leave blank)*
* Decline – Make Cortana your assistant
* Do more across devices with activity history - No
* Turn OFF all 7 Privacy Settings, Accept
  1. Initial Setup prior to Windows Activation
* After arriving at Desktop screen
* Set TimeZone, Date, Time
  + Right-click time display in SysTray
  + Click Adjust Date & Time
  + Off – Set Time Automatically
  + Off – Set Time Zone automatically
  + Set Time Zone – Eastern
  + Click Change date and time
  + Set date & time
  + Click Change
  + Close Settings
* Click Start, Settings (gear icon), select “Update & Security”
  + Windows Update, Advanced Options
  + Set “Semi-Annual” Channel
  + Feature update – defer as long as possible, 365 days
  + Quality update – defer as long as possible, 30 days
  + Close Settings
* **Connect** IC to LAN (Internet)
  + At Firewall popup, select ‘Work’ network and click Yes.
  + Open Control Panel, System and Security, System > scroll to bottom.
  + Click Activate Windows
  + Scroll down and click Change Product Key
  + Enter product key and click Next
  + Click Activate
  + Click Close once the activation is complete
* **Disconnect** IC from LAN (Internet)
* Close Control Panel
* Auto hide Task bar temporarily
  + Right click Task Bar
  + Choose task bar setting
  + Turn on Auto hide

**Remove the “Win10 Study COTS Install” DVD**

1. Apply Secure Host Baseline
   1. Attach External Hard drive with Secure Host Baseline on it to computer
   2. Press the <DEL> to re-enter BIOS Setup
   3. Go to “Save and Exit” Tab
   4. In the Boot Override Section select the Top Folder(UEFI: WD Elements 10781065)
   5. Click “Next” at Computer Details screen
   6. Click “Next” at Locale and Time
   7. Enter ZAQ!1qazXSW@2wsx for the DOD\_Admin password, click “Next”
   8. Let the install progress. The computer will restart several times
2. Microsoft .NET Framework 3.5 SP1
   1. Insert the “Win10\_1803\_English\_x64” DVD
   2. Right-click “Start Menu”, click Powershell (admin)
   3. Click “Yes” at the “User Account Control” prompt
   4. Enter at prompt:

**DISM.exe /online /enable-feature /featurename:NetFX3 /all /source:D:\sources\SxS /limitaccess**

* 1. Remove “Win10\_1803\_English\_x64” DVD from the CD/DVD drive.
  2. Exit (this will close the Powershell panel)
  3. Restart

1. Install SHB130 Chipset Drivers for Windows 10
2. Navigate to the “\COTS\AxiomTek\Chipset Drivers” folders

* 01.Chipset Driver 10.1.17765.8094 Aug-2018
  + Run as Administrator “SetupChipset.exe”
  + Yes at User Account Control
  + Next
  + Accept license terms
  + Install
  + Restart Now
* 02.Rapid Storage Tech (RST) Driver\_14.8.16.1063 Apr-2017
  + Run as Administrator “setuprst.exe”
  + Yes at User Account Control
  + Next
  + Accept license terms, Next
  + Next
  + Next
  + Next
  + Finish – Restarts IC
* 03.Graphics Driver\_14.40.41.5058 18-Sep-2018
  + Run as Administrator “win64\_15.40.41.5058.exe”
  + Yes at User Account Control
  + Next
  + Select – Automatically run WinSAT…, Next
  + Accept license terms - Yes
  + Next
  + Next
  + Click Finish to Restart IC
  + Open Intel HD Graphics from SysTray
  + Click on Graphics Properties
  + Select Display
    - Resolution 1280 x 1024
    - Scaling Maintain Display Scaling
  + Right click Taskbar, choose Taskbar settings
  + Turn off auto hide taskbar
* 04.Network Adapter Driver 23.2 4-May-2018
  + Run as Administrator“PROWinx64.exe”
  + Yes at User Account Control
  + Next
  + Accept license terms
  + De-select – Intel® Advanced Network Services *(Teams and VLANs)*
  + Next
  + Install
  + Finish
  + Restart IC
* 05.Audio Driver\_R282 (v4.60 R2.82)
  + Run as Administrator “0009-64bit\_Win7\_Win8\_Win81\_Win10\_R282.exe”
  + Yes- at User Account Control
  + Next
  + Restart now, Finish
* TPM 1.2
  + Open Device Manager
  + Right-click on “Unknown device” under other devices and select Update Driver
  + Click “Browse my computer for driver software”
  + Click “Let me pick from a list…”
  + Select “Security devices” from list, Next
  + Select (Standard), Model “Trusted Platform Module 1.2”
  + Next
  + Yes – Update Driver Warning popup
  + Close
  + Restart IC now
  + Press the <DEL> key to re-enter the BIOS Setup
  + Go to “Advanced” Tab
  + Select “Trusted Computing”
  + Note: Current Status Configuration

TPM Enabled Status: **Enabled**

TPM Active Status: Activated

TPM Owner Status: **Owned**

* + Then depress <Esc> key to return to the Advanced tab
  + Go to “Save and Exit” Tab
  + Select “Save Changes and Reset”, and press <enter> key
  + TPM successfully provisioned and is now listed in Device Manager under Security devices, Trusted Platform Module 1.2

1. File Explorer View Setup
   1. Launch “Control Panel”
   2. Click on “Appearance and Personalization”
   3. Click “File Explorer Options”, and then click the “View” tab
   4. Select “Display the full path in the title bar”
   5. De-select “Hide empty drives in the Computer folder”
   6. De-select “Hide extensions for known file types”
   7. Select “Expand to open folder”, under the Navigation pane heading
   8. Click “Apply”, then click “Ok”
   9. Close the Control Panel

File Explorer View Setup

* + Launch “Control Panel”
  + Click on “Appearance and Personalization”
  + Click “File Explorer Options”, and then click the “View” tab
  + Select “Display the full path in the title bar”
  + De-select “Hide empty drives in the Computer folder”
  + De-select “Hide extensions for known file types”
  + Select “Expand to open folder”, under the Navigation pane heading
  + Click “Apply”, then click “Ok”
  + Close the Control Panel

1. Power & Sleep setup
   1. Click Start, Settings, System, “Power & Sleep”
      * Set "Screen" to "Never"
      * Set "Sleep" to “Never”
      * Close panel
   2. Click on Windows icon and type gpedit.msc
      * Expand Computer Configuration
      * Expand Administrative Templates
      * Expand System
      * Expand Power Management
      * Select Sleep Setting
        1. Select “Specify the system sleep timeout (plugged in)
        2. Click Enable and set to 14400 seconds
        3. Select “Specify the system hibernate timeout (plugged in)
        4. Click Enable and set to 14400 seconds
        5. Select “Specify the unattended sleep timeout (plugged in)
        6. Click Enable and set to 14400 seconds
   3. Still in Group Policy Editor
      * Expand Computer Configuration
      * Expand Windows Settings
      * Expand Security Settings
      * Expand Local Policies
      * Select Security Options
        1. Select “Interactive Logon: Machine Inactivity”
        2. Set Limit to 5999940 seconds
        3. Click “Apply”
        4. Click “OK”
2. Configure Net Banner
   1. Launch Group Policy Editor
      * At Start menu type gpedit and select Edit Group Policy
      * Yes at UAC
   2. Expand Computer Configuration
   3. Expand Administrative Templates
   4. Select Net Banner
   5. Double Click Classification
      * Set it to Enabled
      * In Drop down select Unclassified
   6. Click Apply, click OK
   7. Close GP Editor
3. Activate Windows
   1. Connect a CAC reader to CIC
   2. Click Start and choose Settings
   3. Click Update & Security
   4. Click Activation
   5. Click Troubleshoot
   6. The Certificate prompt will come up
   7. Enter PIN for CAC
   8. Click OK
   9. Windows is now activated

**Windows 10 Pro System Software initial baseline is complete.**

(OPTIONAL) Create System Image and System Repair discs

1. Load blank DL-DVD disc into optical drive.
2. Right-click Start, Settings, Update & Security
3. Click Backup
4. Click Go to Backup and Restore (Win7)
5. Create a System Image
6. Select DVD RW Drive (D:)
7. Next
8. Click Start Backup
9. Click OK
10. Click Format
11. Close
12. When finished

* Click Create System Repair CD
* Unload System Image DL-DVD and label
* Load blank CD
* Continue
* Eject CD and label
* Close

1. Create GPATS-CIC hard drive partitions
2. Right Click Windows icon chose “Disk Management”.
3. Select the “E” drive in the right pane, then right click it, select “Delete Volume”
4. Click “Yes’ at the confirmation screen
5. In the lower pane, right click the CD-ROM drive, and select “Change drive letter and path”
6. Click “Change”, under the “Assign the following drive letter” drop down menu, select “**F**”, then click “OK”, then click “Yes” at confirmation screen
7. In the lower pane, right click the “C” drive, then click “Shrink Volume”, then click “Shrink”
   * 1. It is possible that Windows will not allow the C drive to shrink. The most probable cause is the Windows.old folder. Navigate to C drive if a folder named “Windows.old” exists, proceed with the following instructions.
        1. Click in the windows search field and type Cleanup. Then click Disk Cleanup.
        2. Click the “Clean up system files” button.
        3. When the Files to Delete window populates, scroll down to Previous Windows Installations
        4. Check the box next to Previous Windows Installations and then make sure nothing else is selected. Click “OK” to start the clean-up.
        5. Attempt to shrink the C *volume again.*
8. Right click the unallocated drive space, and click “New Simple Volume”, click “Next”, and in the “Simple Volume Size” box enter “17935”, click “Next”, click “Next”
9. In the “Volume Label” field, enter **“ATS\_DATA”,** click “Next”, click “Finish”
10. Right click the unallocated drive space, and click “New Simple Volume”, click “Next”, and in the “Simple Volume Size” box enter “40105”, click “Next”, click “Next”
11. In the “Volume Label” field, enter **“APS\_DATA”**, click “Next”, click “Finish”
12. In the lower pane, right click the “C” drive, and select “Properties”
13. In the “Volume Label” field, enter **“ATS\_SYS”**, click “Apply”, then click “OK”
14. Close any open windows

**NI Base Driver install begins.**

Load the “Win10 COTS Install” DVD

1. NI-VISA v18.0.0
   1. Run F:\COTS\NI\NI-VISA\18.0.0\setup.exe as Administrator

* Click “Yes” at the “User Account Control” prompt
* Click “Next” to begin NI-VISA install
* Click “Next” to accept default destination
* Click “Next” to accept default features
* Deselect checkbox for Product Notifications and click “Next”
* Accept all license agreements and click “Next” after each one
* Click “Next” to “trust” NI software
* Click “Next” to begin installation, confirm Fast Startup disabled.
* When prompted, click “Next” to complete installation
  1. Click “Restart” to reboot system
  2. Click “Cancel” if warned by Windows Security that the firewall has blocked features of the National Instruments Software

1. NI-IVI Compliance Package v18.0.0f3
   1. Run F:\COTS\NI\NI-ICP\18.0.0f3\setup.exe as Administrator
   2. Click “Yes” at the “User Account Control” prompt
   3. Click “Next” to begin package installation
   4. Click “Next” to accept default destination
   5. Click “Next” to accept default features
   6. Deselect checkbox for Product Notifications and click “Next”
   7. Accept license agreements and click “Next”
   8. Click “Next” to begin installation
   9. When prompted, click “Finish” to complete installation
   10. Click “Restart” to reboot system
   11. Click “Cancel” if prompted to register NI software
2. NI-VXI v16.0.0
   1. Run F:\COTS\NI\NI-VXI\16.0.0\setup.exe as Administrator
   2. Click “Yes” at the “User Account Control”, if prompted
   3. Click “Next” to begin NI-VXI install

* Click “Next” to accept default destination
* Click “Next” to accept default features
* Deselect checkbox for Product Notifications and click “Next”
* Accept license agreement and click “Next”
* Click “Next” to begin installation
* When prompted, click “Next” to complete installation
  1. Click “Restart” to reboot system
  2. Click “Cancel” if prompted to register NI software
  3. Other device:

Other PCI Bridge Device => VXI Interfaces: PCI-MXI-2

1. NI-CVI RunTime Engine v2017
   1. Run F:\COTS\NI\NI-LWCVIRTE\2017\setup.exe as Administrator
   2. Click “Yes” at the “User Account Control” prompt
   3. Deselect checkbox for Product Notifications and click “Next”
   4. Accept license agreement and click “Next” to begin CVI Runtime Engine 2017 install
   5. When prompted, click “Finish” to complete installation
   6. Click “Restart” to reboot system

**Instrument Driver and their Application installs begin.**

1. NI-488.2 GPIB v18.5.0f1
   1. Run F:\COTS\NI\NI-488.2\18.5.0f1\setup.exe as Administrator
   2. Click “Yes” at the “User Account Control” prompt
   3. Click “Next” to begin NI-488.2 install

* Click “Next” to accept default destination
* Click “Next” to accept default features
* Deselect checkbox for Product Notifications and click “Next”
* Accept license agreement and click “Next”
* Click “Next” to begin installation
* When prompted, click “Next” to complete installation
  1. Click “Restart” to reboot system
  2. Click “Cancel” if prompted to register NI software
  3. Other device:

PCI Simple Communications Controller => NI GPIB Interfaces: NI-PCI-GPIB

This also updated NI-VISA to v18.5.0f0

1. SeaLevel serial port drivers
2. Run F:\SeaLevel\SS030704RC4.exe
3. Click “Next”
4. Select to Accept terms and click “next”
5. Click “Install”
6. Click “Do Not Close Applications…”
7. Click “Yes” at the “User Account Control” prompt
8. Click “Finish” and reboot
9. This device should now be found in Device Manager as a Multi-port Serial Adapter
10. Tews Technologies CAN bus drivers
11. Run F:\Tews\TDRV010-SW-65\installer\_64bit.exe
12. Click “Yes” at the “User Account Control” prompt
13. Install software and accept defaults from resulting prompts
14. This device should now be found in Device Manager as “Embedded I/O”
15. Check device name in Device Manager and compare with device name in CTest in Main.vb. Function TestInstrument() Case can starting around line 1925
16. Ballard 1553 drivers

**Note**: Smart Screen may need to be disabled at this point

* 1. Run F:\COTS\ATS\1553\Driver\BTIINST64.exe as Administrator
  2. Click “Yes” at the “User Account Control” prompt
  3. Accept license terms
  4. Uncheck all drivers in right pane.
  5. Click “Yes” to install the drivers
  6. Ensure that Always Trust…. is checked
  7. Click Install
  8. Click “OK” at Driver installation complete

1. Epix video capture CCA software XCAP-Lite
   1. Run F:\COTS\Epix\Setup.exe as Administrator
   2. Click “Yes” at the “User Account Control” prompt
   3. Select “Setup PIXCI(R) Imaging Software”
   4. Select “**XCAP Imaging Application for Windows 8/7/Vista/XP/2000 32-Bit**” and click “OK”

* Accept defaults in resulting prompts including to not install
* Answer “NO” to question regarding shortcut creation
* Answer “NO” to “Start XCAP for Windows” question, then “OK”
* Click “Cancel” if errors are reported
* Close all screens and reboot
  1. Right-click “Start Menu”, the click “Device Manager”
* Select Other Devices → PCI Device
* Right click and “Update Driver Software”
* Click “Browse my computer for driver software”
* Browse to “C:\Program Files (x86)\EPIX\XCAP\drivers\Win8x64” and click “OK”, then click “Next”, then click “Install”, then click “Close”
  1. Reboot system

Other device:

PCI Device => Imaging devices: PIXCI(R) A310 PCI Analog Video Capture Board for Win XP/Vista/7/8 64-Bit

* 1. Click “Start Menu”, expand “XCAP Imaging”, and then select “XCAP for Windows”
* Accept License, then enter serial number “MHYM/U6RP/NRZU” in the “Software ID” field, and click “Submit”, then click “OK”, then click “Yes”.
* Close application

Application is now setup as XCAP-Lite.

* 1. Restart XCAP program as Administrator by clicking “Start Menu”, expand “XCAP Imaging”, then right click “XCAP for Windows” choose More then select “Run as administrator”
* Click “Yes” at the “User Account Control” prompt
* Click OK, and then click “Cancel” at resulting frame buffer error message
* On Epix XCAP menu bar, click “PIXCI”, then select “PIXCI Open/Close” in resulting drop down menu
* Click “Advanced” in resulting window
* Select the “Memory 2” tab
* Check “Restrict Non-Forceful Memory to be below 4 GByte”, and click “OK”
* Close the PIXCI Open/Close window, and then close the “XCAP for Windows” program
  1. Reboot computer

1. Using Astronics provided COTS Installs Optical Media in the Controller’s DVD drive, install Epix video capture CCA software XCLIB
   1. Run F:\COTS\Epix\Setup.exe as Administrator
   2. Click “Yes” at the “User Account Control” prompt
   3. Select “Setup PIXCI(R) Imaging Software”
   4. Select “**XCLIB C/C++ Library for Windows 8/7/Vista/XP/2000/NT 32-Bit**” and click “OK”

* Click “Next”
* Enter serial number “MUW4/D4YG/O3A2” in the Software ID field, and click “Next”
* Click “Accept” to accept the license agreement, click “Next” to install both available software components, click “Next” to accept the default location, click “Next” to accept the second default location, and wait for installation to complete
* Click “Next” in the resulting Epix Software Installation window
* Click “Next” again, then click “OK” in the “Install Complete” window
  1. Close all remaining windows and reboot system

**Device Manager – all devices are now installed**

1. Teradyne DTI driver v6.3
2. Run F:\Teradyne\M9 DTI driver\Autorun.exe
3. Click “Yes” at the “User Account Control”, if prompted
4. Click “Next” to continue the install shield wizard
5. Enter “USMC” in both the User Name and Company Name entry boxes, then click “Next”
6. Click “Yes” to accept the license agreement
7. Ensure the “Complete” radio button is selected for the installation type, then click “Next”
8. Click “Next” to start copying files
9. Click “Finish” to complete the installation
10. Teradyne CSi Diag v6.2
11. Run F:\Teradyne\CSi Diag V6.2\setup.exe
12. Click “Yes” at the “User Account Control” prompt
13. Click “OK” when warned about the lack of Di-Series driver
14. Click “Next” to continue the install shield wizard
15. Click “Yes” to accept the license agreement
16. Enter “USMC” in both the User Name and Company Name entry boxes, then click “Next”
17. Click “Next” to accept the default destination location
18. Click “Install” to start copying files
19. Click “Finish” to complete the installation
20. Teradyne CSi Diag v6.2P1
21. Run F:\Teradyne\CSi Diag V6.2P1\ Diagnostics\_6.2\_Patch\_1.exe
22. Click “Yes” at the “User Account Control” prompt
23. Click “Start” to extract the installation files
24. Select the “Don’t ask again” checkbox, then click “Yes” to confirm overwrite
25. Click “OK” to complete the installation
26. ATS Ballard 1553 SAIS
    1. Run “F:\COTS\ATS\1553\SAIS\CoPilot710\_57946.exe” as Administrator
    2. Click “Yes” at the “User Account Control” prompt
    3. Click “Install CoPilot 7”, and click “Yes”
    4. Click “I Agree” at license screen
    5. Click “Cancel”
    6. Click “Yes” at the Installation Successful screen, and click “Agree” to accept the EULA
    7. Change the author name to “USMC” at the “Install Configuration Options” screen, then click “OK”
    8. If necessary:

* Click the “Stop” button in the “Global Control” window
* Click the “Project” menu, then select the “Quick Start” menu option
  1. Select the “Start at this screen” radio button under “Startup Options”
  2. Click “Exit”, then click “No” to not save the project
  3. Restart IC

1. 1260 Switch Circuit Cards drivers
   1. Run “F:\COTS\ATS\Switch\_1260\setup.exe” as Administrator
   2. Click “Yes” at the “User Account Control” prompt
   3. Click “OK” to accept the default installation directory
   4. Select “Custom Installation”, and click “Next”
   5. De-select the “32-Bit Soft Front Panel” and click “Next”
   6. Click “Finish, then click “OK”
   7. Restart
2. Astronics 4152A DMM Circuit Card driver
   1. Run “F:\COTS\ATS\DMM\_4152\setup.exe” as Administrator
   2. Click “Yes” at the “User Account Control” prompt
   3. Click “OK” to accept the default installation directory
   4. Select “Custom Installation”, and click “Next”
   5. De-select the “32-Bit Soft Front Panel” and click “Next”
   6. Click “Finish, then click “OK”
   7. Restart
3. Astronics 3152 Function Generator Circuit Card drivers
   1. Run “F:\COTS\ATS\FG\_3152\setup.exe” as Administrator
   2. Click “Yes” at the “User Account Control” prompt
   3. Click “OK” to accept the default installation directory
   4. Select “Custom Installation”, and click “Next”
   5. De-select the “32-Bit Soft Front Panel” and click “Next”
   6. Click “Finish, then click “OK”
   7. Restart
4. Create folder structure
   1. Open File Explorer and navigate to C:\Program Files (x86)
   2. Create a new folder: “C:\Program Files (x86)\ATS\ISS\bin”
   3. Create a new folder: “C:\APS\DATA”
5. WaveCad version 3.4
   1. Run “F:\COTS\ATS\WaveCad\Setup.exe” as Administrator
   2. Click “Yes” at the “User Account Control” prompt
   3. Click “Next”
   4. In the “Customer Information” screen, type “USMC” in both the “User Name” and the “Customer Name” fields, and then click “Next”
   5. Choose “Custom”
   6. Click “Next”
   7. Click “Browse”
   8. Navigate the path to “C:\Program Files(x86)\ATS\ISS\bin”
   9. Click “Ok”
   10. Click “Next”
   11. In the “Select Features” window, de-select all the checkboxes EXCEPT “3152” and “3152a”, and click “Next”
   12. De-select the check box to launch WaveCad
   13. Click “Finish”­­
   14. Reboot the system
   15. If, upon restart, you are prompted to register NI software, click “Cancel”
6. Synchro\Resolver NAI 65CS4 Circuit Card drivers
7. Run “F:\NAI\VXI\_65CS4\_IVI\_Rev2\_9\setup.exe”
8. Click “Yes” at the “User Account Control” prompt
9. Click “Next”, then Click “Next”
10. Click “Finish”
11. Keysight E1420B Circuit Card driver
12. Copy “F:\Keysight\HPE1420B.DLL to

C:\Program Files(x86)\IVI Foundation\Visa\WINNT\Bin

1. Keysight E1445A Circuit Card driver
2. Copy “F:\Keysight\Hpe1445a.dll to

C:\Program Files(x86)\IVI Foundation\Visa\WINNT\Bin

1. ZTec ZT1428 Circuit Card driver
2. Copy “F:\ZTec\ZT1428.dll to

C:\Program Files(x86)\IVI Foundation\Visa\WINNT\Bin

1. Freedom PDU driver
   1. Copy “F:\Freedom\APS6062.dll” to C:\Program Files(x86)\IVI Foundation\Visa\WINNT\Bin
2. PAWS WRTS version 1.41.0
   1. Run “F:\COTS\ATS\PAWS WRTS\2017010\_1\setup.exe” as Administrator
   2. Click “Yes” at the “User Account Control” prompt (if needed)
   3. Click “Next”, then click “OK”
   4. Select “I accept the terms…”, click “Next”
   5. Enter “User Name” as “Operator”
   6. Enter “Company Name” as “USMC”
   7. Enter “Serial Number” as “2017010\_1”
   8. Click “Next”, then click “Next”
   9. De-select checkboxes for “Subsets” and “Project Examples”, and click “Next”
   10. Click “Next”, and wait for installation to complete
   11. Click “Finish”
3. IRWin2001 Software
4. Run “F:\SBIR\IRWin2001\setup.exe”
5. Click “Next”, then click “Next”
6. Click “Yes” at the “User Account Control” prompt (if needed)
7. Click “Close”
8. Run “F:\SBIR\formatfilecopy.bat”
9. Coyote Collimator Laser Camera Software
10. Run “F:\Coyote\iPort\_install\Setup.Exe”
11. Click “Yes” at the “User Account Control” prompt
12. Click “Next”, then click “Next”
13. Click “Next”, select “Reboot after Installation”, then click “Next”
14. Select “Everyone”, then click “Next”
15. Click “OK” at Registering Com/Active X warning screen
16. Click “Close”
17. Click “Yes” to restart
18. Copy “F:\Coyote\IrwdVeo2Pleora.xml” to “C:\IRWin2001”
19. Click “Copy and Replace” when prompted
20. VXITech Digitizer Software
21. Run “F:\VXITech\setup.exe”
22. Click “Yes” at the “User Account Control” prompt
23. Click “Next”, then click “Next”
24. Click “Next”, then click “Next”
25. Click “Finish”, then click “Yes” to restart

**All instrument drivers and their applications are now installed.**

**Begin instrument configuration.**

1. Configure COM Ports
   1. Click “Start Menu”, then “Sealevel Systems - SeaCOM”, then “Port Manager”
   2. Click “Yes” at the “User Account Control” prompt
   3. Click “Remove Device” repeatedly until all ports are gone from window
   4. Click “Apply”, then click “OK” to close “Port Manager”
   5. Reboot the computer
   6. Click “Start Menu”, then “Sealevel Systems - SeaCOM”, then “Port Manager”
   7. Click “Yes” at the “User Account Control” prompt
   8. Select “Communications Port”

* In the Port Name drop down, select “**COM2**”, then click “Apply”

If there is a port number conflict in the following steps, just set the offending target COMx to COM6 or higher.

* 1. Select “COMM+4 PCI 4 Port RS-232/422/485 (**Port 1**)”
* Set Oscillator Frequency [Hz] to 1843200
* Set FIFO Enabled
* Click Apply
* Reselect Port 1
* Set “Receive FIFO” in the “Trigger Level” block to 65
* Set “Transmit FIFO” in the “Trigger Level” block to 65
* In the Port Name drop down, select “**COM1**”, then click “Apply”
  1. Select “COMM+4 PCI 4 Port RS-232/422/485 (**Port 2**)”
* Set Oscillator Frequency [Hz] to 1843200
* Set FIFO Enabled
* Click Apply
* Reselect Port 2
* Set “Receive FIFO” in the “Trigger Level” block to 65
* Set “Transmit FIFO” in the “Trigger Level” block to 65
* In the Port Name drop down, select “**COM5**”, then click “Apply”
  1. Select “COMM+4 PCI 4 Port RS-232/422/485 (Port 3)”
* Set Oscillator Frequency [Hz] to 1843200
* Set FIFO Enabled
* Click Apply
* Reselect Port 3
* Set “Receive FIFO” in the “Trigger Level” block to 65
* Set “Transmit FIFO” in the “Trigger Level” block to 65
* In the Port Name drop down, select “COM4”, then click “Apply”
  1. Select “COMM+4 PCI 4 Port RS-232/422/485 (Port 4)”
* Set Oscillator Frequency [Hz] to 1843200
* Set FIFO Enabled
* Click Apply
* Reselect Port 4
* Set “Receive FIFO” in the “Trigger Level” block to 65
* Set “Transmit FIFO” in the “Trigger Level” block to 65
* In the Port Name drop down, select “COM3”, then click “Apply”
  1. Close Port Manager

1. Configure Ethernet ports
   1. Click Start, Settings, Network & Internet
   2. In left pane: Click Ethernet
   3. In right-pane: Click Change Adapter Options
   4. Note that there are 6 possible connections shown. Only four of these are wired to external connectors.
   5. If there is a port named “Local Area Connection”, rename it to something (anything) else
   6. Plug an Ethernet cable into J15 and J16

* Note that the red X will disappear for the two named connections that have been connected (this shows which two ports have been connected via the red cable)
* Move one end of the red cable from J16 to J18 paying close attention to which X returns and disappears in the Adapter Settings Screen. Note that the enumerated connection that remains connected must be J15. The connection that was connected and now shows disconnected is J16, and the newly enumerated connection must be J18. Use this technique to determine which connection is J19. The port names should be changed using this information as follows:
  + Rename the J15 port to “Gigabit1”
  + Rename the J16 port to “Gigabit2”
  + Rename the J18 port to “Local Area Connection”
  + Rename the J19 port to “Gigabit4”
  + Rename the last two connections Local Area Connection X and Local Area Connection Y
  1. Run “F:\COTS\SetIPAddress\ SetIPAddress.bat” as Administrator

1. Disable Windows Defender so NI MAX can run
   1. Open Windows Defender Security Center
   2. Click Firewall & Network protection
   3. Click Advanced Settings and say “Yes” to UAC
   4. Click inbound rules
   5. Double click Measurement and Automation Exp
   6. Select allow the connection
   7. Do this for both instances
2. Change Ownership of NI
   1. Navigate to C:\Program Files (x86)\National Instruments
   2. Right click the National Instruments folder and select Properties
   3. Go to Security tab
   4. Click the “Advanced” button
   5. Go to Owner tab
   6. Change current owner to Administrators
3. Enable low level register access and set user window size for M9 hardware
   1. Click Start, launch program NI MAX
   2. If prompted, cancel the Windows Security alert regarding the Windows Firewall
   3. In the left pane, expand the “Devices and Interfaces” under the “My System” entry
   4. Right-click the “VXI System 0 (PCI-MXI-2)” under the “Devices and Interfaces” entry and select “Hardware Configuration”
   5. Select the “PCI” tab
   6. Check the Enable low-level register access API support” box
   7. Set User Window Size to 2MB
   8. Ensure the “Enable PCI expansion ROM” checkbox is selected
   9. Ensure the “DMA Setting” drop down is set to “Enable DMA on this controller”
   10. Click “OK”
   11. Click “OK” to acknowledge that a reboot is required if prompted, else close NI MAX and proceed to the next step

**Begin installation of support applications.**

1. Install PsExec
   1. Create folder C:\Program Files\Tester Programs\PsExec
   2. Copy PsExec.exe into this fodler
   3. Open a command window as Administrator
      * Click the Windows icon
      * Type cmd
      * Right click Command Prompt and choose Run As Administrator
      * Copy the first line from PSExec.txt and paste into command window, hit enter
      * Copy the second line from PSExec.txt and paste into command window, hit enter
2. Using Astronics provided COTS Installs Optical Media, install the IADS Reader v3.4.25:
3. Run “F:\IADS Reader\ver3\_4\_25\IADS\_3\_4\_25.exe” as **administrator** (right click→”**Run as Administrator**”)
4. Click “Yes” at the “User Account Control” prompt
5. Click “Next”
6. Click “Next”
7. Click “Finish”
8. Click “Windows Icon”🡪IADS 3.4, right-click “IADS Config” and select More than “**Run as Administrator**”
9. Click “Yes” at the “User Account Control” prompt
10. Ensure “Default (WIN.INI)” is selected
11. Click on “RPSTL” tab
12. In box labeled “TM Info File Location:” type “F:\”
13. In box labeled “Drive or Prefix for Paths in the TM Info File:” type “F:”
14. Click “Save”, then click “OK”
15. Click “Exit”
16. Click “Windows Icon”🡪IADS 3.4, click “IADS Config” to launch
17. Click on User Settings tab
18. Only the following selections should have check marks
    1. Show hotspots on images
    2. Show tooltip prompts for control panel buttons
    3. Show text labels on toolbar buttons
    4. Allow multiple IADS instances
19. Scroll down and click SAVE
20. Click OK and Exit
21. Using Astronics provided COTS Installs Optical Media, install the IADS Reader v3.2.7:
    1. Run “F:\COTS\IADS Reader\ver3\_2\_7\iads\_3\_2\_7.exe” as administrator (right click→”Run as Administrator”)
    2. Click “Yes” at the “User Account Control” prompt
    3. Click “Next”
    4. Click “Next”
    5. Click “Next”, then click “No” for desktop shortcut to be installed
    6. Click “Finish”
    7. Click “Start 🡪right-click IADS Admin 🡪 More, Open File Location
    8. Right-click IADS Reader” and select “Properties”
    9. Select the “Shortcut” tab
    10. Enter the following string in the “Target” entry box: “C:\IADS\PROGRAMS\READR.EXE –userid32767” (append the string “ –userid32767”)
    11. Click “Apply”, then click “Continue”, then click “OK”
    12. Close IADS panel
    13. Click “Start 🡪 IADS 🡪 IADS Reader” to launch IADS reader 3.2 and click “DEFAULT” in the upper right hand corner of the GUI
    14. Click “Use current file” in the “Default document file” group box
    15. Ensure only the following selections have check marks

* Show hotspots on images
* Show tooltip prompts for control panel buttons
* Show text labels on toolbar buttons
  1. Click “Apply”, then click “OK”
  2. Close the GUI, then click “No” when prompted
  3. Click Start 🡪 IADS, right-click “IADS Configuration” and select “More” then select “Run as Administrator”
  4. Click “Yes” at the “User Account Control” prompt
  5. In box labeled “Hard Drive”, type “F:”
  6. In box labeled “Remote Drive”, type “F:”
  7. In box labeled “TM\_INFO\_PATH:” type “F:\”
  8. Click “Apply”, then click “OK”

1. VB Power Packs version 10
2. Run “F:\Microsoft\VBPP10\VisualBasicPowerPacksSetup.exe”
3. Click “Yes” to install, then click “Next”
4. Select “I have read and accept the license terms”, then click “Install”
5. Click “Finish”
6. Navigate to root of APS\_DATA (E:) and delete the 24 orphaned items which are a result of a known housekeeping bug in the installer.
7. Adobe Acrobat Reader 2017
   1. Run as Admin “F:\COTS\Adobe\Base\AcroRdr20171700830051\_MUI.exe”
   2. Click “Yes” at User Account Control
   3. Confirm make my default reader is… - Checked
   4. Click “Install”
   5. Click “Finish”
   6. Double-click “F:\COTS\Adobe\Update\AcroRdr2017Upd1701130106\_MUI.msp”
   7. Click “Update”
   8. Click “Yes”
   9. Click “Finish”
8. Configure Microsoft Internet Explorer 11
   1. Launch Internet Explorer (Click Start, scroll down list and expand Windows Accessories, select Internet Explorer)
   2. Click “Use recommended security, privacy, and compatibility settings”, click OK
   3. Under Settings, Default Apps popup, under Web browser, click Microsoft Edge

* At popup, select “Internet Explorer”
* Switch anyway if prompted
  1. Close Settings-Default Apps panel
  2. At Internet Options panel, click OK, Close IE11

1. Using Astronics provided COTS Installs Optical Media, install Powershell Cmdlets
2. Run “F:\Powershell\Powershell\_Setup.bat” as **administrator** (right click→”**Run as Administrator**”)
3. Click “Yes” at the “User Account Control” prompt
4. Using Astronics provided COTS Installs Optical Media, install TATS Legacy OCX Support
   1. Copy “F:\COTS\TATS Legacy Support\TABCTL32.OCX” to C:\Windows\SysWOW64

* Click “Continue” if/when prompter for provide Administrator permission
  1. Copy “F:\COTS\TATS Legacy Support\RICHTX32.OCX” to C:\Windows\SysWOW64
* Click “Continue” if/when prompter for provide Administrator permission
  1. Run “F:\COTS\TATS Legacy Support\RegisterOCX.bat” as administrator (right click→”Run as Administrator”)
* Click “Yes” at the “User Account Control”, if prompted
* Click OK (twice) at the registry success windows

1. Using Astronics provided COTS Installs Optical Media, install the McAfee Virus Scanner Software
   1. Run “F:\COTS\McAfee\VSE880P11\SetupVSE.exe” as administrator (right click → ”Run as Administrator”)
   2. Click “Yes” at the User Account Control
   3. Click “Next”
   4. Choose license expiration type: 1 Year Subscription, 2 Year Subscription, **Perpetual**
   5. Click the “I accept the terms…” radio button, and click “OK”
   6. Click “Next” to install the typical setup type
   7. Click “Next” to accept the standard protection level
   8. Click “Install” to begin the installation
   9. Deselect “Run On-Demand Scan” checkbox
   10. Click “Finish” and then click “Close” at the update screen
   11. Click “OK” when McAfee network driver prompt window is displayed
   12. Restart
2. Using Astronics provided COTS Installs Optical Media, install the McAfee Virus Scanner Software Patch11 Hot Fix
   1. Run “F:\COTS\McAfee\VSE880P11HF\VSE88HF1230882.exe” as administrator (right click → ”Run as Administrator”)
   2. Click “Yes” at the User Account Control
   3. Click “Next”
   4. Click “Finish”
3. Using Astronics provided COTS Installs Optical Media, apply the McAfee Virus Scanner DAT Signature update
   1. Run “F:\COTS\McAfee\DAT update\CM-234299-9072xdat.exe” as administrator (right click→”Run as Administrator”)
   2. Click “Yes” at the User Account Control
   3. Click “Next”
   4. Click “Finish”
4. Update the McAfee Virus Scanner Software
   1. Click “Start” Menu → “McAfee”, then click “Virus Scan Console”
   2. Click “Yes” at the User Account Control
   3. In the “Task” list, double-click “AutoUpdate”
   4. Click the “Schedule” button
   5. Deselect the “Enable” checkbox, click “Apply”, then click “OK”
   6. Click “OK” to close AutoUpdate Properties window. Status is now “Not Scheduled”
   7. On the menu bar, click “Task → On-Access Scanner Properties”
   8. Select the “General” tab
      * In the “Scan” group box, ensure the "Boot Sectors" and “Floppy during shutdown” options are selected
      * In the “General” group box, ensure the "Enable on-access scanning at system startup" option is selected
   9. Select the “Messages” tab
      * In the "Messages for local users" group box, ensure the "Show the messages dialog box when a threat is detected and display the specified text in the message" option is selected
      * In the "Actions available to user" group box, ensure the "Remove messages from the list" option is NOT selected.
   10. Select the “Reports” tab
       * In the "Log file" group box, ensure the "Enable activity logging and accept the default location for the log file or specify a new location" option is selected
       * In the "Log file" group box, ensure the "Limit the size of log file" option is selected, and set the “Maximum log file size (MB): from “1” to “10”
       * In the "What to log in addition to scanning activity" group box, ensure the "Session summary" and “Failure to scan encrypted files” options are selected
   11. Click “Apply”, then click “OK”
   12. On the menu bar, click “Task → New On-Demand Scan Task”, and enter “Weekly Scan” as the name for the new scan task, then depress <ENTER>
   13. “On-Demand Scan Properties” window will popup
   14. Click “Schedule…” button in right pane
       * Click “Enable” option in the “Schedule Settings” group box
       * Select the “Schedule” tab
         1. Set the “Run Task” drop down box to “Weekly”, and set the “Start Time:” box to “2:00 AM Local Time”
         2. Select “Monday” in the “Schedule Task Weekly” group box
         3. Click “Apply”, then click “OK”
   15. Select the “Scan Items” tab
       * In the “Options” group box Ensure that “Decode MIME encoded files”, “Scan Inside Archives”, and “Detect unwanted programs” options are selected
       * Click “Apply”, then click “OK”
   16. Close the Virus Scan Console
5. Edit registry to force Windows to wait for apps to close
   1. In the “Search” box type “regedit” and run as admin
   2. Click “Yes” in the User Account Control
   3. Edit WaitToKillServiceTimeout
      * Expand “HKEY\_LOCAL\_MACHINE”
      * Expand “SYSTEM”
      * Expand “CURRENTCONTROLSET”
      * Select “Control”
      * Edit the “WaitToKillServiceTimeout” and change from 5000 to 1200000
   4. Add WaitToKillAppTimeout & HungAppTimeout
      * Expand “HKEY\_ USERS”
      * Expand “.DEFAULT”
      * Expand “Control Panel”
      * Select “Desktop”
        1. Right click in the white space of the right side pane, and select “New”, then click “String Value”
      * Rename this entry “WaitToKillAppTimeout”
      * Double click it, and set it equal to “1200000”
        1. Right click in the white space of the right side pane, and select “New”, then click “String Value”
      * Rename this entry “HungAppTimeout”
      * Double click it, and set it equal to “1200000”
   5. Close the registry editor
6. Accept Adobe licenses
7. Click “Start Menu”, click “Acrobat Reader 2017”
8. Click “Accept” to accept the license agreement
9. Close Adobe Acrobat Reader

**Begin IA/Cybersecurity Setup**

1. Change Password Policy Rules
   1. In Start menu type gpedit to open Group Policy Editor
   2. Expand Computer Configuration
   3. Expand Windows Settings
   4. Expand Security Settings
   5. Expand Account Policies
   6. Select Password Policy and set the following
      * Double click Enforce password history
        1. Set to zero
        2. Click OK
      * Double click Maximum password age
        1. Set to zero
        2. Click OK
      * Double click Minimum password age
        1. Set to zero
        2. Click OK
      * Double click Minimum password length
        1. Set to zero
        2. Click OK
      * Double click Password must meet certain complexity requirements
      * Disable
      * Click OK
2. Configure the User Accounts
   1. Right click Windows Icon, Choose Computer Management
   2. Expand “Local Users and Groups” in the “Computer Management” (Local) pane
   3. Select “Users”
   4. Configure Administrator account
      * Right click “SHB Administrator” account in the right pane and rename it to “Administrator”
      * Select “Set Password”, then select “Proceed”
      * Set password to “**ATSU856**”, confirm password as “**ATSU856**”, select “OK”, then click OK at the confirmation screen
      * Right click “Administrator” account in the right pane
      * Select “Properties”
      * Set the Full name field to “Administrator”, Description field to “Test System Administrator”
      * Uncheck the “Account is disabled” box
      * Click “Apply” and then click “OK”
   5. Add Operator account
      * Right-click the “Users” folder in the left pane
      * Select “New User”
      * Set User name to “Operator”, Full name to “Operator”, Description to “Test System Operator”
      * Leave the Password and Confirm Password fields blank
      * Uncheck “User must change password at next login” box, then check “User cannot change password”, check “Password never expires”
      * Click “Create”, then click “Close”
   6. Add Maintenance account
      * Right-click the “Users” folder in the left pane
      * Select “New User”
      * Set User name to “Maintenance”, Full name to “Maintenance”, Description to “Test System Maintenance”
      * Set password to “**2874ACCESS**”, confirm password as “**2874ACCESS**”
      * Uncheck “User must change password at next login” box, then check “User cannot change password”, check “Password never expires”
      * Click “Create”, then click “Close”
      * Close “Computer Management” screen
      * Log Off the system
      * Log in to Administrator Account
   7. Make Maintenance Account Power User
      * Select “Maintenance” in the right pane, right click and select “Properties”
      * Select the “Member of” tab, and then click the “Add” button
      * In the “Select Groups” window, type “Power Users”, then click the “Check Names” button, then click OK
      * Click “Apply”, then click “OK”
   8. Make Operator Account Network Configuration Operator
      * Select “Operator” in the right pane, right click and select “Properties”
      * Select the “Member of” tab, and then click the “Add” button
      * In the “Select Groups” window, type “Network Configuration Operators”, then click the “Check Names” button, then click OK
      * Click “Apply”, then click “OK”
   9. Close the “Computer Management” window
   10. Reboot the system and login as “Administrator”
3. Provide permission for Administrator account to start CICL
   1. In Cortana search, type “gpedit.msc” and press <Enter> to open the “Local Group Policy Editor” window
   2. Expand the **Computer Configuration**
   3. Expand **Windows Settings**
   4. Expand the **Security Settings**
   5. Expand the **Local Policies**
   6. Select “**Security Options**”

* Double click “**User Account Control: Run All Administrators in Admin Aprroval Mode”** in the right pane
* In the resulting window, select “Disabled”
* Click “Apply”, then click “OK”

1. Setup Logon Policy
   1. In Cortana search, type “gpedit.msc” and press <Enter> to open the “Local Group Policy Editor” window
   2. Expand the **Computer Configuration**
   3. Expand **Windows Settings**
   4. Expand the **Security Settings**
   5. Expand the **Local Policies**
   6. Select “**Security Options**”

* Double click “**Interactive logon: Don’t display last signed-in**” in the right pane
* In the resulting “…Don’t display last signed-in Properties” window, select “Enabled”
* Click “Apply”, then click “OK”

1. Set Consent Prompt Behavior
   1. In Cortana search, type “regedit” and press <Enter> to open the “Registry” window
   2. Expand **HKEY\_LOCAL\_MACHINE**
   3. Expand **Software**
   4. Expand **Microsoft**
   5. Expand **Windows**
   6. Expand **Current** **Version**
   7. Expand **Policies**
   8. Expand **System**
   9. Double click “**ConsentPromptBehaviorUser**”
   10. Change value data to a 3
2. Disable Fast User Switching and edit user permissions
   1. Expand the “**Computer Configuration**
   2. Expand **Administrative Templates**
   3. Expand the “**System**”
   4. Select “**Logon**”

* Double click “**Hide entry points for Fast User Switching**” in the right pane
* In the resulting “Hide entry points for Fast User Switching” window, select “**Enabled**”
* Click “Apply”, then click “OK”
  1. Still in “**Administrative Templates**” expand the “**Control Panel**” section
  2. Select “**User Accounts**” in the left pane
* Double click the “**Apply the default user logon picture to all users**”
* In the resulting “Apply the default user logon picture to all users” window, select “**Enabled**”
* Click “Apply”, then “OK”
  1. Expand the **User Configuration**
  2. Expand **Administrative Templates**
  3. Expand the “**Control Panel**””
  4. Select “**Display**” under the “Control Panel” in the left pane
* Double click “**Disable the Display Control Panel**” in the right pane
* In the resulting “Disable the Display Control Panel” window, select “**Enabled**”
* Click “Apply”, then “OK”
  1. Still in “**Control Panel**”
  2. Select “**Printers**” under the “Control Panel” in the left pane
* Double click “**Prevent addition of Printers**” in the right pane
* In the resulting “Disable the Display Control Panel” window, select “**Enabled**”
* Click “Apply”, then “OK”
  1. Still in “**Control Panel**”
  2. Select “**Personalization**” under the “Control Panel” in the left pane
* Double click “**Prevent changing desktop background**” in the right pane
* In the resulting “Prevent changing desktop background” window, select “**Enabled**”
* Click “Apply”, then “OK”

1. Restrict users from adding printers
   1. Expand “**Computer Configuration**
   2. Expand **Windows Settings**
   3. Expand **Security Settings**
   4. Expand **Local Policies**
   5. Select “**Security Options**” in the left panel

* Double click “**Devices: Prevent Users From Installing Printer Drivers**” in the right pane
* Select “**Enabled**”, then click “Apply”, then click “OK”

1. Add CTRL-ATL-DEL(Still in Security Options)
   1. Double click “**Interactive Logon: Do not require CTRL-ALT-DEL**” in the right pane

* Select “Disabled”, then click “Apply”, then click “OK”

1. Restrict User graphics permissions
   1. Open File Explorer and navigate to “C:\Windows\System32”
   2. In the upper right hand side of the window, search for “igfxCPL.cpl” (only edit permissions on the file found in “C:\Windows\System32”)
   3. For this file:

* Right click the filename, and select “Properties”
* Click the “Security” tab, then click “Edit” button
* Select “Users”
* Under “Permissions for Users” window
* Click “Remove”
* Click “Apply”, click “Yes” when prompted, then click “OK”
* Click “OK”
  1. In the “C:\Windows\System32 directory”, search for “Gfxv4\_0.exe” (only edit permissions on the file found in “C:\Windows\System32”)
  2. For this file:
* Right click the filename, and select “Properties”
* Click the “Security” tab, then click “Edit” button
* Select “Users”
* Click “Remove”
* Click “Apply”, click “Yes” when prompted, then click “OK”
* Click “OK”

1. Configure Windows Messaging
   1. Open “Control Panel”
   2. Click “System and Security”, then “Security and Maintenance”
   3. Click “Change Security and Maintenance settings”

* Click Turn Off Messages about “Virus Protection”
* Click Turn Off Messages about “Windows Backup”
* Click Turn Off Messages about “HomeGroup”
  + Note in Enterprise unable to turn this off
* Click Turn Off Messages about “File History”
* Click Turn Off Messages about “Storage Spaces”
* Click Turn Off Messages about “Work Folders”
* Click “OK”
  1. Close “Control Panel”

1. Enable Secondary Logon
   1. In Cortana search, type “Services.msc” and press <Enter> to open the “Services window” window
   2. Scroll down to locate Secondary Logon in the Right panel
   3. In the Startup Type drop down menu choose Automatic
   4. Click Apply
   5. Close the window
2. Clean up “Start Menu”
   1. Launch File Explorer, set View to show “Hidden items”
   2. Navigate to “C:\ProgramData\Microsoft\Windows\Start Menu\Programs”
   3. Select “CoPilot 7” Folder

* Press “Delete” key
  1. Select “Intel” Folder
* Press “Delete” key
  1. Select “Microsoft Silverlight” Folder
* Press “Delete” key
  1. Select “NAI65CS4 Soft Panel” Folder
* Press “Delete” key
* Click “Yes” to confirm deletion
  1. Select “Python 2.5” Folder
* Press “Delete” key
* Click “Yes” to confirm deletion
  1. Select “Sealevel Systems - SeaCOM” Folder
* Press “Delete” key
  1. Expand “Startup” Folder
* Select “NI Error Reporting”
* Press “Delete” key
  1. Select “Vxipnp” Folder
* Press “Delete” key
  1. Select “XCAP Imaging” Folder
* Press “Delete” key
  1. Expand “Windows Accessories”
* Select “Windows Media Player”
* Press “Delete” key
  1. Select “Maintenance”
* Press “Delete” key
* Click “Yes” to confirm deletion
  1. Select “Acrobat Reader 2017” Shortcut
* Press “Delete” key
  1. Select “NI Max” Shortcut
* Press “Delete” key
  1. Set File Explorer, View to hide “Hidden items”
  2. Close File Explorer
  3. Right click the “Recycle Bin” and then select “Empty Recycle Bin”, then click “Yes”
  4. Launch Control Panel -> Programs -> Programs and Features
* Click “Turn Windows features on or off”
* Expand “Print and Document Services”
* Deselect “Windows Fax and Scan”
* Deselect “Microsoft XPS Document Writer”

(This removes the above two applications completely)

* Click OK
* The computer restarts

1. Provide permission for Maintenance Account to enable/disable automatic System Monitor software launch
   1. In the “Search” box type “regedit” and press <Enter> to open the Registry Editor
   2. Expand “HKEY\_LOCAL\_MACHINE→ SOFTWARE→ Wow6432Node→ Microsoft→ Windows→ CurrentVersion”
   3. Right-Click “Run” in the left hand pane tree view, and select “Permissions…”
   4. Click “Add…”
   5. Type “Maintenance” in the provided object names edit box,then click “Check Names”
   6. Click “OK”
   7. Select (Left-click) Maintenance in the “Groups or User Names” box of the “Permissions for Run” window, and click “Advanced”
   8. Click “Edit…”
   9. Left-click (select) the “Full Control” checkbox in the “Allow” column
   10. Left-click (select) the “Apply these permissions to objects and/or containers within this container only” near the bottom of the screen
   11. Click “OK”
   12. Click “Apply”, then click “OK”
   13. Click “Apply”, then click “OK”
   14. Close the registry editor

**Note: At this point you may want to make a system back up image**

**At this point, the Controller MUST be fully cabled to the Test Station.**

**This allows the proper startup of CICL, SysMon and other applications.**

1. Insert the GPATS-CIC Built products media
2. Run “Disk1\setup.exe" from the media created in section 3.3.1.2.2 above
3. Click “Next”, then click “Next”, then click “Install”
4. **Deselect** the “Launch the Program” checkbox and click “Finish”
5. Add the FHDB and FaultFile to Windows System Databases
6. Open Windows Explorer and navigate to "**C:\Windows\SysWOW64**"
7. Select "odbcad32.exe", right click, and select "**Run As Administrator"**
8. Select the “**System DSN**” tab in the resulting ODBC Data Source Administrator Window
9. Click “Add…”
   1. Select “Driver do Microsoft Access (\*.mdb)”
   2. Click “Finish”
   3. In the “Data Source Name” field, type “FHDB”
   4. In the “Description” field, type “Fault History Database”
   5. Click “Select…”
   6. In the Directories navigation field of the “Select Database” window, navigate to “C:\Users\Public\Documents\ATS”
   7. Select “FHDB.mdb” in the Database Name list and click “OK”, then click “OK”
10. Click “Add…”
    1. Select “Driver do Microsoft Access (\*.mdb)”
    2. Click “Finish”
    3. In the “Data Source Name” field, type “FaultFile”
    4. In the “Description” field, type “TPS Fault File”
    5. Click “Select…”
    6. In the Directories navigation field of the “Select Database” window, navigate to “C:\aps\data”
    7. Select “FaultFile.mdb” in the Database Name list and click “OK”
    8. Click “OK”, then click “OK”
11. Change computer name if desired (This is not beneficial if the user is going to create an ESR after completion of the Gold System Build)
    1. Click “Start Menu”, then click “Computer”
    2. In the left window pane, right click “Computer” and click “Properties”
    3. In the “Computer Name”, domain and workgroup settings” portion of the window, click “Change settings”
    4. Click “Change”
    5. In the “Computer Name” section, edit the field to read “GPATSCIC-XXXX” where “XXXX” identifies the system serial number
    6. Click “OK”
    7. Click “OK” to acknowledge a restart is required
    8. Close the “System Properties” window, then click “Restart Now”
12. Reboot system and logon as Administrator
    1. Reboot the system
    2. Log in to Administrator Account
    3. Answer questions appropriately, and wait for system to shutdown
    4. Power on and logon as Administrator
    5. Wait for the system to start and run through Confidence Test
    6. Close the ATS System Startup Menu

**Begin Personalization Setup**

**For all accounts (these tasks must be affected on each account, so after completing the following tasks as Administrator, perform the following after restarting the system and logging into the Maintenance account and also the Operator account. You must allow the System Monitor to start and complete its tasks.)**

1. Remove Unused Applications

**Note**: The Maintenance and Operator accounts are unable to remove One Drive

* 1. Click Start -> Settings -> Apps
  2. Scroll to “Microsoft OneDrive”
* Click and Uninstall, Uninstall
  1. Scroll to “Microsoft Solitaire Collection”
* Click and Uninstall, Uninstall
  1. Scroll to “My Office”
* Click and Uninstall, Uninstall
  1. Scroll to “Xbox Live”
* Click and Uninstall, Uninstall
  1. Close Settings panel

1. Setup File Explorer Options
   1. Launch “Control Panel”
   2. Click on “Appearance and Personalization”
   3. Click “File Explorer Options”, and then click the “View” tab

* Select “Display the full path in the title bar”
* De-select “Hide empty drives”
* De-select “Hide extensions for known file types”
* Scroll down, Select “Expand to open folder”, under the Navigation pane heading
* Click “Apply”, then click “Ok”

1. Setup Taskbar and Navigation
   1. Right Click “Taskbar”

* Choose Task Bar Settings
  1. For “People
* Turn OFF, “Show contacts on the taskbar”
  1. For “Notification Area”
* Click “Select which icons appear on the taskbar”
* Turn ON, Windows Explorer – Safely Remove Hardware…
* Turn ON, McTray Application
* Turn ON, Windows Defender…
* Turn OFF, Volume
* Turn ON, SysMon
* Turn ON, igfxTray Module
* Return back to Settings

1. Setup Start
   1. Click on “Start” in left pane

* Turn OFF, “Show recently added apps”
  1. Click on “Choose which folders appear on Start”
* Turn ON, “File Explorer”
  1. Close Settings
  2. Close Control Panel

1. Setup Cortana and Toolbar Views
   1. Right-click on systray icon ^

* For Cortana, select “Show Cortana icon”
  1. Right-click on systray icon ^
* For Toolbars, select “Desktop”

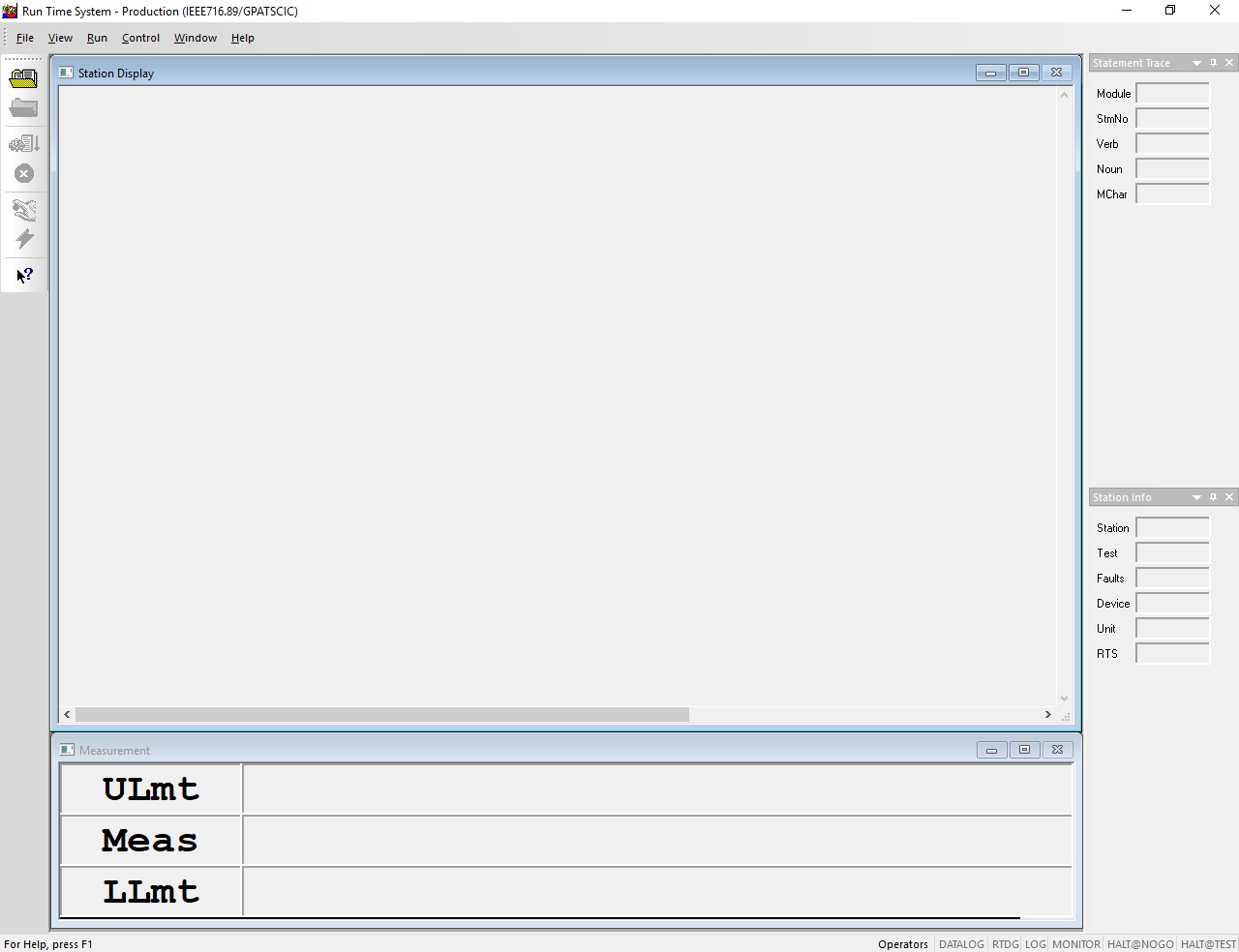
1. Taskbar cleanup
   1. Right-click on each icon and unpin from taskbar

* Mail
* Microsoft Store
* Edge

1. Setup Windows Defender Security Center
   1. Launch Windows Defender Security Center

* Click “Dismiss”, Account protection
  1. Close Windows Defender

1. Desktop Cleanup
   1. Delete all Desktop Icons except “Recycle Bin” and empty the recycle bin
2. Configure PAWS WRTS
   1. Open PAWS WRTS (Click “Professional Atlas Workstation Run-Time System” icon on the ATS System Menu)
   2. Select “[IEEE716.89]” in the “Subset” section and “[GPATSCIC]” in the “Station” section of the Setup window and click “OK”
3. Click “Cancel” to close the “Open” window
4. At full screen, organize the various panels to match following layout:



1. Click the “Control” menu, and select “Options”
2. Ensure that all the options checkboxes in the “Rts GUI” group box are NOT selected
3. Click “Printer Property Pages” button
4. In the “File” box, enter “C:\aps\data\Printer”
5. Click “Apply”, then click “OK”
6. Click “RTS Property Pages” button
   1. In the “RTS General” tab, “Non-ATLAS Module” group box, select the “Hidden” radio button
   2. In the “Configuration” group box, ensure that ONLY the “Production” checkbox is selected
   3. In the “ATE Reset conditions” group box, select “TPS Load”, then click “Apply”
   4. In the “EHF” tab, “EHF File” group box, select the “Read-Only; Unable to Change It” radio button, then click “Apply”
   5. In the “IOSubsystem” tab, click “Add”
      1. In the “Resource Name” box enter “C:\APS\DATA\TEMP”, and in the “ProgID” box enter “**RtsIO.FileResource**”, then click “OK”
   6. In the “IOSubsystem” tab, click “Add”
      1. In the “Resource Name” box enter “C:\APS\DATA\FAULT-FILE”, and in the “ProgID” box enter “**RtsIO.FileResource**”, then click “OK”
   7. In the “IOSubsystem” tab, “Resource Name” list box, highlight (select) “INFO”, then click “Properties”
      1. Select the “Filter CEM Preamble” checkbox, then click “Apply”, then click “OK”
   8. In the “IOSubsystem” tab, “Resource Name” list box, highlight (select) “INPUT”, then click “Change”
      1. In the “ProgID” box enter “**RtsIO.DlgInputResource**”, then click “OK”
      2. Click “Apply”, then click “OK”, then click “OK” to close the Options menu
7. Click the “View” menu, and select “Toolbars and Docking Windows”, then select “Change profile…”
   1. Select “Supervisors” in the ”Profile” drop down menu
   2. Enter PAWS default password (paws123)
8. Click the “View” menu, and select “Manager”
   1. Select (highlight) “Operators”, then click “Properties”
   2. Select the “Customize all” checkbox
   3. Click the “Commands” tab
   4. In the “File” drop down menu, select “Control”
   5. With the “Menu” radio button selected, deselect the “Options” checkbox
   6. Select the “Toolbar” radio button
   7. Deselect the “Start At …” checkbox
   8. Click “OK”, then click “OK” again
9. Close PAWS WRTS
10. Setup/Configure Internet Explorer
    1. Launch Internet Explorer to open IE11
    2. Click “OK” to “Use recommended security, privacy, and compatibility settings”, if prompted, click OK.
    3. Click “Don’t enable” in the lower portion of the IE screen to skip enabling ‘scriptproxy’ add-on from McAfee, Inc, if prompted
    4. Click the gear icon in the upper right corner, then select “Internet Options” to enter the setting menus
    5. Select the “Programs” tab, and click “Make Internet Explorer the default browser”
    6. From “Default Apps” popup, click on Web browser “Microsoft Edge”
    7. Select Internet Explorer, Switch anyway
    8. Close “Default Apps” window
    9. Click OK
    10. Close IE11, and click “Close All Tabs” if prompted
11. Configure Windows Media Player
    1. Click Settings, Apps, Default Apps
    2. Click Video Player “Movies & TV”
    3. Select “Windows Media Player”
    4. Close “Default Apps” window
    5. Navigate to C:\program Files (x86)\ and launch Windows Media Player “wmplayer.exe”
    6. Select “Recommended settings” radio button, then click “Finish”
    7. Close all screens
12. Configure IADS 3.2 Reader
    1. Click Start 🡪 Iads 🡪 IADS Reader to launch IADS reader 3.2 and click “DEFAULT” in the upper right hand corner of the GUI
    2. Click “Use current file” in the “Default document file” group box
    3. Ensure the following selections have check marks
13. Show hotspots on images
14. Show tooltip prompts for control panel buttons
15. Show text labels on toolbar buttons
    1. Click “Apply”, then click “OK”
    2. Close the GUI, then click “No” when prompted
16. Configure IADS 3.4 Reader
17. Click Start 🡪 IADS 3.4, click “IADS Config” to launch
18. Click on User Settings tab
19. Only the following selections should have check marks
20. Show hotspots on images
21. Show tooltip prompts for control panel buttons
22. Show text labels on toolbar buttons
23. Allow multiple IADS instances
24. Scroll down if needed and click “SAVE”
25. Click “OK” and “Exit”
26. Configure Windows Messaging
    1. Open “Control Panel”
    2. Click “System and Security”, then “Security and Maintenance”
    3. Click “Change Security and Maintenance settings”

* Click Turn Off Messages about “Virus Protection”
* Click Turn Off Messages about “Windows Backup”
* Click Turn Off Messages about “HomeGroup”
* Click Turn Off Messages about “File History”
* Click Turn Off Messages about “Storage Spaces”
* Click Turn Off Messages about “Work Folders”
* Click “OK”
  1. Close “Control Panel”

1. Accept the CoPilot license
   1. From ATS Menu, click on SAIS, run the MIL-STD-1553 Soft Front Panel
   2. Click “Agree” at license screen
   3. Click “OK” to accept the author name
   4. Click the “Stop” button in the “Global Control” window
   5. Click the “Project” menu, then select the “Quick Start” menu option
   6. Select the “Start at this screen” radio button under “Startup Options”
   7. Close the CoPilot Soft Front Panel
   8. Click “No” to not save the project if prompted
   9. Close the SAIS Toolbar
2. Perform configurations for other accounts (Maintenance and Operator)
   1. Right click the System Monitor Icon in the system tray, and select “Shutdown ATS”, and perform **74-88** for the other accounts (Maintenance and Operator)
3. Disable the System Monitor Automatic Launch
   1. Login as Administrator
   2. Open File Explorer
   3. Navigate to C:\Program Files (x86)\ATS\Development
   4. Run (double-click) “registryNoRunSysMon.reg”
   5. Click “Yes”, then click “OK”
   6. Reboot, and login as Administrator
4. Overwrite FHDB with Empty Database
   1. Using Astronics provided COTS Installs DVD
   2. Copy “F:\COTS\FHDB Database\FHDB.mdb” to “C:\Users\Public\Public Documents\ATS”, and then click “Copy and Replace” when prompted
5. Enable the System Monitor Automatic Launch, only if desired to connect to station for evaluation. Otherwise if continuing on to make the ESR in section 3.3.3 below, this step is skipped)
   1. Open File Explorer
   2. Navigate to C:\Program Files (x86)\ATS\Development
   3. Run (double-click) “registryRunSysMon.reg”
   4. Click “Yes”, then click “OK”

### “Gold” Image Disk Creation (SSR\_ESR\_XXX)

**Materials:**

* Fully Configured GPATS-CIC Controller
* External DVD burner capable of writing Dual Layer DVDs
* ChassisPlans “System Recovery Disc Windows 7 Pro 64 Bit SPK 1” DVD
* Development PC with DVD burner and application that supports writing of bootable DVDs.

1. Login as Administrator if required (it is not required if you are continuing from section 3.3.2 above because you are already logged in as Administrator)
2. Kill the System Monitor Task if Required (it is not required if you have preceded this with section 3.3.2 step 79 above, and did not perform section 3.3.2 step 81 above)
3. Press the <CTRL> <ALT> <DEL> simultaneously
4. Click “Start Task Manager”
5. Click the “Processes” tab
6. Select the “Sysmon.exe \*32” process
7. Right click it, and select “End Process Tree”
8. Disable the System Monitor Automatic Launch (it is not required if you have preceded this with section 3.3.2 step 79 above, and did not perform section 3.3.2 step 81 above)
9. Open Windows Explorer
10. Navigate to C:\Program Files (x86)\ATS\Development
11. Run (double-click) “registryNoRunSysMon.reg”
12. Click “Yes”, then click “OK”
13. Change computer name if required (this is not required if the computer is already named “GPATSCIC-XXXX”)
14. Right click Start Menu, choose System
15. Click Rename This PC
16. In the empty field type “GPATSCIC-XXXX” to represent a generic GPATS-CIC controller
17. Click “OK”
18. Click “OK” to acknowledge a restart is required
19. Close the “System Properties” window, then click “Restart Now”
20. Login as Administrator
21. Delete NI-MAX configuration data
22. Run “C:\Program Files (x86)\National Instruments\MAX\NIMax.exe
    1. Click “Cancel” if Windows Firewall prompts with a security alert
    2. In the “Tools” drop down menu, click “Reset Configuration Data”, then click “Yes” at UAC prompt
    3. Click “Yes” to reset the NI configuration data
    4. Click “No” when asked to “restart now” (do not restart)
23. Click Start, and in the “Search programs and Files” box type “regedit” and press <Enter> to open the Registry Editor
    1. Expand “**HKEY\_LOCAL\_MACHINE**”
    2. Expand “**SYSTEM**”
    3. Expand “**CURRENTCONTROLSET**”
    4. Expand “**sevices**”
    5. Expand “**VXI**”
    6. Delete “**board0**”
    7. Close Registry editor
24. Delete Ethernet Ports
25. Right click “Windows Icon”, then click “Device Manager”
26. Click “Yes” at UAC
27. Expand “Network Adapters” in the right pane and uninstall the following right clicking, choose Uninstall Device, then click Uninstall
    1. Intel® Ethernet Connection I217-LM
    2. Intel® Ethernet Server Adapter I350-T4
    3. Intel® Ethernet Server Adapter I350-T4 #2
    4. Intel® Ethernet Server Adapter I350-T4 #3
    5. Intel® Ethernet Server Adapter I350-T4 #4
    6. Intel® I210 Gigabit Network Connection
28. Delete the serial number in the ATS.ini (make the entry blank as shown)
29. Open Windows Explorer
30. Navigate to “Users\Public\Public Documents\ATS
31. Edit the ATS.ini entry as shown:

[System Startup]

* + 1. SN=

1. Delete files
2. Open Windows Explorer
3. Navigate to “Users\Public\Public Documents\ATS”
4. Delete “SYSLOG.txt” and “ETI\_Timer\_Log.txt”
5. Delete “START.LOG” if it exists
6. Overwrite FHDB with Empty Database(this is not required if you have preceded this with section 3.3.2 step 80 above)
7. Using Astronics provided COTS Installs Optical Media, copy “F:\FHDB Database\FHDB.mdb” to “C:\Users\Public\Public Documents\ATS”, and then click “Copy and Replace” when prompted
8. Empty Recycle Bin
9. Right click the “Recycle Bin” and then select “Empty Recycle Bin”, then click “Yes”
10. Enable the System Monitor Automatic Launch
11. Open Windows Explorer
12. Navigate to C:\Program Files (x86)\ATS\Development
13. Run (double-click) “registryRunSysMon.reg”
14. Click “Yes”, then click “OK”
15. Create Hard Drive Image on DVD (use dual layer DVDs)
    1. Connect an external DVD writer to a USB connection on the front of the IC
    2. Click “Start Menu”, then click “Control Panel”
    3. Click “System and Security”
    4. Click “Backup and Restore (Windows 7)”
    5. Click “Create a System Image”, “Yes” at the UAC prompt
    6. Click “One or More DVDs”, and select drive “G” (assuming drive G is the external DVD writer), then click “Next”.
    7. Select all hard drive volumes (ensure C, D, and E are selected), then click “Next”
    8. Click “Start Backup”
    9. Insert a blank Dual Layer DVD disk into an external DVD writer at the prompt, and click “OK”
    10. If you receive a format prompt, check “Don’t ask again for this backup”, then click “Format”
    11. When image creation is complete, you will be prompted “Do you want to create a system repair disk”. If this is your first backup, you may wish to create one. If so, continue and follow the directions to create a system repair disk, or else click “No”, and then click “Close”

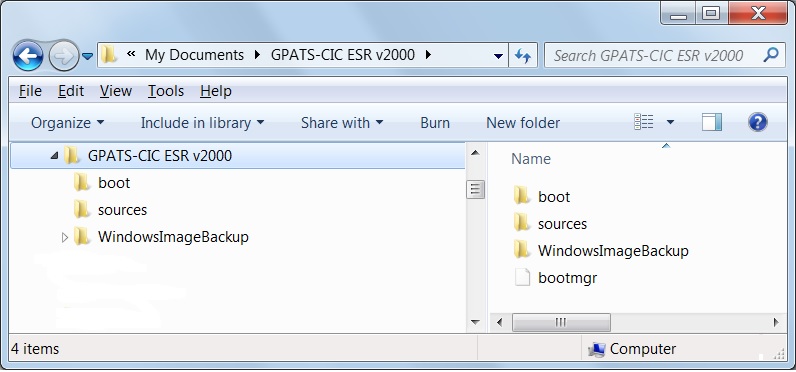
Note: It may take more than one DVD

* 1. Remove DVD from external DVD writer and label appropriately

1. Create bootable ESR DVD (This step is currently not possible)
2. Load Hard Drive Image DVD created in step 11 above to the Development (ESR DVD creation) PC. This Development PC should have appropriate CD/DVD burning application and optical disc drive to create bootable dual-layer DVD (ImgBurn or equivalent disk burning software as listed above in the OSDS Creation section 3.3.1 step 9)
3. Ensure the Windows Explorer folder options “View” is set to show hidden files, folders or drives
4. Click “Start Menu”, click “Control Panel”
5. Click on “Appearance and Personalization”
6. Click “Folder Options”, and then click the “View” tab
7. Select “Show hidden files, folders, and drives”
8. Click “Apply”, then click “Ok”
9. Close the Control Panel
10. Using Windows Explorer, navigate to My Documents and create the temporary folder “GPATS-CIC ESR v2000”.

“*UserName* > My Documents > GPATS-CIC ESR v2000”

1. Copy the “WindowsImageBackup” folder found on the DVD to the ”GPATS-CIC ESR v2000” folder on the Development PC
2. Remove the Hard Drive Image DVD from the PC and load the ChassisPlans “System Recovery Disc Windows 7 Professional 64 Bit SPK 1” DVD.
3. From the ChassisPlans “System Recovery Disc” DVD, copy its contents to the “GPATS-CIC ESR v2000” folder.



1. Launch ImgBurn or equivalent CD/DVD burning application and perform the following setup.
2. From top toolbar, select Mode > EZ-Mode Picker…
3. Click “Write Files/Folder to Disc”
4. Click on “Options” tab and configure the following:

Image Options

Data Type: MODE1/2048

File System: ISO9660 + UDF

UDF Revision: 1.02

Recurse Subdirectories: checked

Include Hidden Files: checked

Include System Files: checked

1. Click on Labels tab,

Volume Label

ISO9660: GPATS-CIC ESR

UDF: GPATS-CIC ESR

1. Click on Advanced tab, then Restrictions tab,

ISO9660 tab:

Click”1999” profile near menu bottom.

At popup "Change the options to comply with the ISO9660:1999 standard?”, click Yes

Configure the following:

Folder/File Name Length: Level X – 219 Characters

Character Set: ASCII

Allow more than 8 directory levels: checked

Allow more than 255 characters in path: checked

Allow files without extensions: checked

Allow files exceeding size limit: checked

Select - multiple extents

Don’t add ‘;1’ version numbers to files: checked

1. Click on Bootable Disc tab,

Options

Make Image Bootable: checked

Extract Boot Image

In dropdown menu select “CdRom ()”

Click floppy-disc icon (Extract Boot Image)

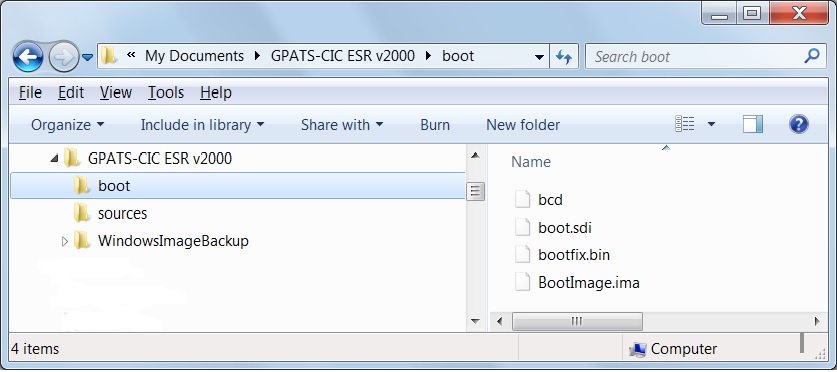
* In Windows Explorer popup window, the “BootImage.ima” is automatically selected.
* Navigate to:

“My Documents > GPATS-CIC ESR v2000 > boot”

* Click “Save” button.

Click OK to Operation Successful.

At popup prompt “Would you like to use the boot image file in your current project? Yes



ImgBurn will automatically fill Options, as follows:

Emulation Type: None

Boot Image: C:\Users\*username*\Documents\GPATS-CIC ESR 2000\boot\BootImage.IMA

Platform ID: 80x86

Developer ID: Microsoft IMAPIv2

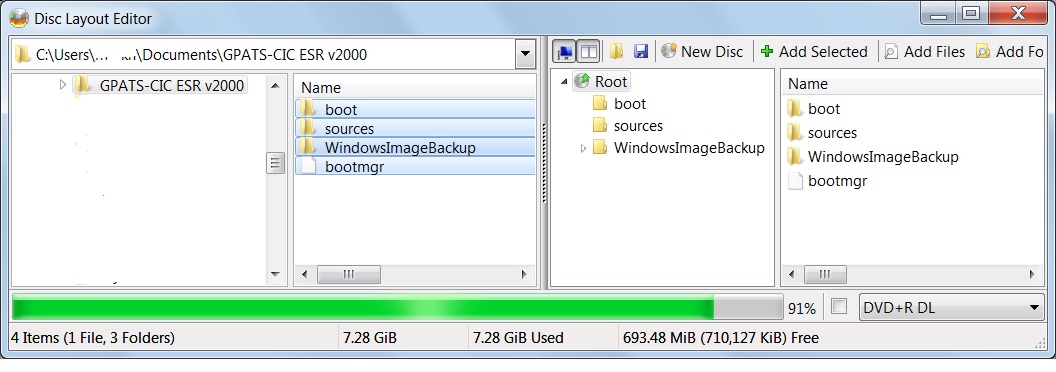
Load Segment: 07C0

Sectors to Load: 8

1. Remove ChassisPlans “System Recovery Disc” DVD
2. Load blank dual-layer DVD
3. Within ImgBurn Source pane, click “Show Disc Layout Editor”
4. In Windows Explorer popup, navigate to:

My Documents > GPATS-CIC ESR v2000

In left-pane, select all files under “Name” and drag to right-pane “Name” as data to write to dual-layer DVD



1. Close “Disc Layout Editor” window
2. Perform WRITE w/verify
3. Remove DL-DVD and label as Emergency Software Recovery (bootable) disk.

### ESR Installation

1. If installing on a new computer, you may need to set up the system BIOS.(see Section 3.3.2.3) If BIOS is already set, proceed to step 2
2. Create UDD before beginning the ESR installation
3. Boot computer using the System Software Release – Emergency Software Recovery image disk
   1. Power up controller and insert Recovery Disk
   2. Restart the computer
   3. Enter the system BIOS by depressing the <DEL> key as the system is coming up
   4. Enter BIOS password as required
   5. Go to “Save and Exit” tab, and select “UEFI: DV-W28SS-B” in the “Boot Override” section and press <enter> key
   6. Press any key when prompted to boot from the CD or DVD

***Note: It takes a while to get to this next step***

* 1. Choose US Keyboard Layout
  2. Choose Troubleshoot
  3. Choose System Image Recovery
  4. Choose Windows 10
  5. You will get a message that “Windows cannot find a system image on this computer”
  6. Remove Recovery Disk and insert Disk 2, Click “Retry”
  7. In the “Select a system image backup” window select the “Select a system image” radio button, then click “Next”
  8. In the “Select the location of the backup for the computer you want to restore” window select the list entry that corresponds to the image found on the DVD drive. That entry will have the “Computer Name” listed as “GPATSCIC-XXXX”. Click “Next”
  9. In the “Select the date and time of the system image to restore” window select the only list entry presented to select the date and time backup available for “GPATSCIC-XXXX on DVD Drive”. Click “Next”
  10. In the “Choose additional restore options” window select (check) the box to “Format and repartition disks”, and ensure that the “Only restore system drives” box is NOT checked, then click “Next”
  11. Click “Finish” at the resulting “Re-image your computer” prompt, then click “Yes”
  12. When prompted insert Disk 1 and Click OK
  13. When prompted insert Disk 2 and Click OK
  14. After the image is installed, allow the system to restart
  15. Remove and store the SSR-ESR disk

1. Login as Administrator and answer SysMon questions appropriately until prompted that SysMon will automatically shutdown
   1. Is the current Date and Time = MM/DD/YYYY HH:MM AM/PM?
   2. ATS Initial Setup is now complete, Click [OK] to continue.
   3. Is the Configuration correct?
   4. Enter System Serial Number, then click OK.
   5. Is the Serial Number correct?
   6. Follow instructions on the Configure Ethernet Ports window. When complete click OK, this will run a program that will set the IP Addresses for the ports.
   7. Verify in the command window that there were no errors setting the Ethernet Ports. Click Enter to close the window.
   8. If there were errors in the command window, click “Retry” in the second Configure Ethernet Ports pop up window. If no errors then click “Cancel”.
   9. DO NOT click OK in the system will automatically shut down window at this time. Leave this pop-up window opened.
2. Activate Windows
3. Connect a Common Access Card (CAC) reader into the CIC
4. Insert your CAC
5. Click the Windows Icon and click Control Panel
6. Click System and Security
7. Click System
8. Click Activate Windows (towards bottom of screen)
9. Click Troubleshoot
10. A Certificate window pops up, click OK
11. Enter your PIN
12. Click OK
13. Windows is now activated
14. Change computer name
15. Right click “Start Menu”, Choose System
16. Click “Rename this PC”
17. Click “Yes” at UAC
18. In the empty field type “GPATSCIC-XXXX” where “XXXX” identifies the system serial number
19. Click Next
20. Click “Restart Later”
21. Click “OK” in the Sysmon prompt to shut down the system
22. Power up the controller, logon as Administrator, and verify proper system operation
    1. Import UDD information if desired

### Automatic System Monitor Start at Login

The System Monitor software is normally configured to launch automatically when any user logs into the system computer. This is performed using a registry entry. It may be desirable to stop the system from automatically launching system monitor. This can be accomplished by running an automated registry editing script that is included on the computer hard drive. System Monitor automatic launch can also be re-enabled by running a different script, also included on the computer hard drive. Only the System Administrator and the Maintenance login accounts have permission to run these scripts. Other users (Operator account) may attempt to run these scripts, and the Windows OS will not report any errors, however the registry edit will not occur, and system operation will not change.

To disable the System Monitor automatic launch, perform the following steps:

1. Open Windows Explorer
2. Navigate to C:\Program Files (x86)\ATS\Development
3. Run (double-click) “registryNoRunSysMon.reg”
4. Click “Yes”, then click “OK”

To re-enable the System Monitor automatic launch, perform the following steps:

1. Open Windows Explorer
2. Navigate to C:\Program Files (x86)\ATS\Development
3. Run (double-click) “registryRunSysMon.reg”
4. Click “Yes”, then click “OK”

### ATS Software Product Installation/Upgrade

The ATS software product (created in section 3.3.1.2.2) can be installed/upgraded without the overhead of performing the entire “Gold System” build task. This is very helpful to test and verify system software changes that do not require any new COTS Installations, or to provide a quick upgrade to a system without having to reimage the entire hard drive. To do this, the System Monitor process, the CICLKernel service, and the RFMS service must not be running. Also, the ATS software must be uninstalled. Note that only the system administrator account has permission to uninstall and reinstall system software. To install/upgrade the ATS product software without loading an ESR, perform the following steps:

1. Reboot the system and login as Administrator
   1. Note that the system startup process will begin automatically
2. Stop System Monitor from starting at login
   1. Open Windows Explorer
   2. Navigate to C:\Program Files (x86)\ATS\Development
   3. Run (double-click) “registryNoRunSysMon.reg”
   4. Click “Yes”, then click “OK”
3. Reboot the system and login as Administrator
   1. Note that the system monitor no longer starts automatically
4. Uninstall the ATS product software
   1. Click “Start Menu”, click “Control Panel”
   2. Click on “Programs”
   3. Click “Uninstall a program”
   4. In the resulting list of installed software programs, select (left-click) “Automated Test System (ATS) System Software”
   5. Left-Click “Uninstall”, then click “Yes”
5. Install the new ATS product software
6. Insert the GPATS-CIC Built products media
7. Run “Disk1\setup.exe" from the media created in section 3.3.1.2.2 above
8. Click “Next”, then click “Next”, then click “Install”
9. Deselect the “Launch the Program” checkbox and click “Finish”
10. Configure System Monitor to start at login
11. Open Windows Explorer
12. Navigate to C:\Program Files (x86)\ATS\Development
13. Run (double-click) “registryRunSysMon.reg”
14. Click “Yes”, then click “OK”
15. Reboot the system and login as Administrator
    1. System Monitor will start as is the normal initial startup. Answer questions and continue operation as normal.

## Other documentation

The software documentation set is identified in the following table. For historical purposes, both the current and the previous document numbers are provided. The new document numbers apply to the current contract N64267-15-C-0021. The previous document numbers apply to previous contract M67854-97-D-3047. Note that the Statement of Work and System Specification documents are embedded in the Contract for the GPATS-CIC system.

Table 1 - Software Documentation

| **Document Name** | **Document Scope** | **GPATS-CIC Document Number** | **VIPER/T**  **Document Number** |
| --- | --- | --- | --- |
| Statement of Work for the Third Echelon Test System (TETS) Radio-Frequency (RF), Electro-Optical (EO), Electro-Optical/Radio-Frequency (EO/RF) Variants | Statement of Work | N64267-15-C-0021 (Contract document) | unknown |
| Performance Specification for the Third Echelon Test Set (TETS) | System Performance Specification | N64267-15-C-0021 (Contract document) | unknown |
| Software Development Plan (SDP) | Describes software development activities | B973046 | 7992007 |
| System/SubSystem Design Description (SSDD) | Describes the capabilities and specifications of the GPATS-CIC | B973063 | 7992008 |
| Computer Programmer’s Manual (CPM) | ATLAS language reference manual | B973062 | 7992021 |
| Software Product Specification (SPS) | Summarizes the complete software deliverable. | B973049 | 7992094 |
| Software Version Description (SVD) | Describes the contents of each GPATS-CIC software release. | B973051 | 7992018 |

## Personnel

The following skills are required of the personnel maintaining the GPATS-CIC software.

For operational system maintenance:

* Working knowledge of Windows 7
* Working knowledge of programming with Microsoft Visual Studio, particularly VB.NET and C/C++
* Working knowledge of programming ATLAS Databases and WCEMs

## Other resources

It is recommended, but not mandatory, that software source code files be maintained in a Source Code Repository using version control. One such system is Apache Subversion (SVN), which is distributed as free software under the Apache License.

## Interrelationship of components

The following diagram shows the various software resources and their relationship. Software is preserved in the Source Code Repository. If an operational software change is made, the changed code is placed onto the “Gold” Instrument Controller along with the baseline COTS software. An image of the “Gold” Instrument Controller is then made and tested on an operational GPATS-CIC system.

# GPATS-CIC System Software Development

Compiled

Software

Boot

Files

Software

Installed

Software

Installed

GPATS-CIC IC Lunchbox Computer

System

Image

Figure 2 – OSDS Resource Relationships

# Recommended procedures

None.

# Training

There is no training specified for this contract.

# Anticipated areas of change

No specific software changes are anticipated. All software source code for this project is included and this transition plan is written with the intent that any of the GPATS-CIC System Source Code may be changed and the product rebuilt.

# Transition planning

Software development for the GPATS-CIC program occurs at Astronics Test Systems through August 2017. After that point, qualification testing will begin (FAT), and a baseline software revision will be established and source and target binary media will be made available to the Government. The standard one year warranty is shown to begin after completion of qualification testing.

Q1

PDR

CDR

Software Efforts

Qualification Testing

2016

2017

2018

Q3

Q1

Q3

Q1

Q2

Q2

Q3

Q2

Q4

Q4

Q4

Warranty Period

PAC

Figure 3 - Software Development Schedule

# Notes

Table 2- List of Acronyms

|  |  |
| --- | --- |
| ASCII | American Standard Code for Information Interchange |
| ATLAS  ATS | Abbreviated Test Language for All Systems  Astronics Test Systems |
| CCA | Circuit Card Assembly |
| CDR | Critical Design Review |
| CDRL  CIC | Contract Data Requirements List  Common Instrument Controller |
| COM | Computer Operator’s Manual |
| COTS | Commercial-Off-The-Shelf |
| CPM | Computer Programmer’s Manual |
| DID | Data Item Description |
| DVD | Digital Versatile Disk |
| FAT | Final Acceptance Test |
| GPATS | General Purpose Automatic Test Systems |
| IC  IDE | Instrument Controller  Integrated Development Environment |
| LRU | Line Replaceable Unit |
| N/A | Not Applicable |
| NAM | Non-ATLAS Module |
| OSDS | Operational Software Development Station |
| PAWS | Personal ATLAS Work Station |
| PDR | Preliminary Design Review |
| PS | Performance Specification |
| RF | Radio-Frequency |
| RTS | Run Time System |
| SDD  SRU | System Design Description  Shop Replaceable Unit |
| STrP | Software Transition Plan |
| SUM | Software User’s Manual |
| SVD | Software Version Description |
| TETS | Third Echelon Test System |
| TMDE | Test, Measurement, and Diagnostic Equipment |
| TPS | Test Program Set |
| TPSDS | Test Program Set Development Station |
| VS2012 | Visual Studio 2012 IDE |
| WCEM | Windows CIIL Emulation process |