SETUP:

LED Setup:

Place test equipment in the Nominal System Test Equipment Setup with wACS powered on in Normal Mode. For information on how to set wACS in Normal Mode, see Lab Notes>Systems Tester>Normal Mode

Set HPP to NORMAL mode.

Load and install the default wACS Configuration and wACS Customization files. See Lab Notes>Systems Tester>Configuration and Customization Install.

STEPS:

Enable all AMC channels

Apply Power (28VDC) to the wACS.

Monitor the AFS6400, AFS6460, and AFS6480 LEDs

Observation:

1) While AFS6400 STATUS LED is BLUE:

a) AFS6400 CONFIG LED is OFF

b) AFS6400 SSD LED is OFF

c) AFS6460 STATUS LED is OFF

d) AFS6480 STATUS LED is OFF

2) When the AFS6400 STATUS LED transitions to GREEN:

a) AFS6460 STATUS LED is BLUE

b) AFS6480 STATUS LED is BLUE

d) AFS6400 CONFIG LED is OFF

e) AFS6400 SSD LED is OFF

3)While the AFS6400 STATUS LED is GREEN:

a) AFS6460 STATUS LED transitions from BLUE to GREEN

b) AFS6480 STATUS LED transitions from BLUE to GREEN

d) AFS6400 CONFIG LED is OFF

e) AFS6400 SSD LED is OFF

DMAU File Download:

Place test equipment in the Nominal System Test Equipment Setup with wACS powered on in Normal Mode

Wireshark setup to capture WDTS\_STS (IRS\_387). For better filtering through Wireshark, use the filter "ip.src == 193.0.161.151 and udp.port == 13001".

STEP 30: SD Card available and inserted in the AFS6480.

STEP 40: Test Computer running Windows OS 7 available for use.

STEPS:

Perform a complete flight sequence [Ground Rotor Stop>Ground Rotor Run > Flight >Ground Rotor Run > Ground Rotor Stop.

Execute a manual download of HMS data.

When the AFS6480 STATUS LED is solid green (not blinking), eject the SD card from the AFS6480.

: Insert the SD card into a test computer running Windows OS 7 and inspect the contents.

Observation:

The HMS files are found on the SD Card using a PC with Windows OS 7

The DMAU flight data is located under the /Flight Data/<Session>/DMAU/

DMAU upload setup:

Restore test equipment to the Nominal System Test Equipment Setup.

Wireshark set up to capture IRS\_378.

Launch avionics simulators. See Lab Notes> Simulators>Launch Simulators.

Ensure no AMC channel is enabled through the AMC simulator.

Valid DMAU CF placed in the /repo/DMAU\_CF/CF/ directory of the AISD.

Steps:

Initiate upload of DMAU CF to the DMAU using the MFD simulator. For specific instructions, see Lab Notes>Simulators>MFD>DMAU Upload.

Observation:

The presence of IRS\_378 indicates the DMAU CF upload command was sent.

The transition of the "STATUS" field within IRS\_378 from "1" to "2" indicates the DMAU CF completed DMAU CF upload.

steps:

Nominal System Test Equipment Setup with wACS powered off.

Setup Wireshark to capture WDTS\_STS messages on the avionics Ethernet.

Disable all channels on AMC simulator.

STEP 20: Power on wACS and wait for system to enter Maintenance State.

STEP 30: Inspect the WDTS\_STS (IRS\_387) messages sent by the AFS6400.

Observation:

IRS\_387 (WDTS\_STS) the following:

*CELLULAR\_ON\_OFF* = 0

*WIFI\_ON\_OFF*= 0

*WAP\_ON\_OFF*= 1

Wacs to RMD Setup:

Restore test equipment to the Nominal System Test Equipment Setup with HPP set to Normal Mode.

Clear the ACS repository.

s TEP 20: Obtain an SD Card (SDXC media card with UHS speed class rating 1 or greater, and a capacity of 64 GB). Format the card and clear its contents See [Lab Notes > System Tester > SD Card] for instructions.

STEP 30: Using the AMC Simulator, execute a flight sequence (Ground->Flight->Ground).

Steps:

STEP 40: Insert SD Card into RMD

When RMD status LED stops flashing, remove SD card from RMD and inspect contents of the SD card.

Observation:

The RMD Status LED is the front-facing LED (*under the cover*) that indicates failure and removable media activity. The LED blinks GREEN to indicate activity with the SD Card.

The flight data from the just performed flight is copied to the SD Card.

RMD to wACS Import:

Restore test equipment to the Nominal System Test Equipment Setup.

STEP 20: Obtain two SD Cards (SDXC media card with UHS speed class rating 1). Format the cards and clear their contents See [Lab Notes > System Tester > SD Card] for instructions.

Power OFF the wACS. See [Lab Notes > System Tester > Power Down] for instructions

Power ON the wACS equipment is in Normal Mode Maintenance State. See [Lab Notes > System Tester > wACS Modes > Normal Mode>Maintenance State] and [Lab Notes > System Tester > Power On] for instructions.

STEP 60: Insert the SD card with the **valid** digital signature into RMD.

STEP 70:Wait at least 30 seconds to give time for file transfer from RMD.

Observation:

The AFS6400 Repository contains the imported file

Wacs to GSS cellular export:

STEP 10: Place test equipment in the Nominal System Test Equipment Setup with Nominal wACS Customization and Configuration Files installed on the wACS and Nominal GCS Customization File installed on the GSS6000.

STEP 20: Launch simulators; see Lab Notes>Simulators>Launch Simulators

STEP 30: wACS powered ON in Normal Mode Operational State; see Lab Notes>Systems Tester>wACS Modes>Normal Mode>Operational State

STEP 50: Login to GSS6000 HMI as an administrator. See Lab Notes>GCS>GCS HMI.

STEP 40: Enable Gatelink Cellular radio to establish VPN tunnel between ACS and GCS and ensure (through the MFD simulator) that the latitude and longitude are set for a geolocation that supports Gatelink Cellular connection, per the installed wACS Customization File

Observation:

The GCS HMI displays the session for export after it has received all files from the wACS of a similar type and session.

Wacs to GSS wifi export/import:

Restore test equipment to the Nominal System Test Equipment Setup.

Install testmeans.

Install nominal wACS Customization file for all parameters, except settings include "Preferred Data Links" where all Preference 1 data links are Gatelink Wi-Fi and all Preference 2 data links are blank is installed on the wACS. Nominal wACS Configuration File installed on the wACS (dual spatial streams enabled). ( create load and save )

Tablet powered ON and running Postman (GCS API). For information on how to set up and configure Postman for the GCS API, see Lab Notes>GCS>Postman

Steps:

STEP 10: Surpress wireless capabilities by grounding WAP\_OFF, CELL\_OFF and WIFI\_OFF through the simulator Softpanel.

STEP 20: Power wACS ON in Operational State

STEP 30: Using the AMC simulator, execute two ground->air->ground flight sequences

STEP 85: Perform three full-cycle flight sessions using the AMC Simulator

STEP 90: Enable Gatelink WiFi radio to establish VPN tunnel between ACS and GCS by ungrounding WIFI\_OFF through the simulator Softpanel and ensuring (through the MFD simulator) that the latitude and longitude are set for a geolocation that supports Gatelink Wi-Fi connection, per the installed wACS Customization File.

STEP 105: Perform three full-cycle flight sessions using the AMC Simulator and allow them to export to the ground

STEP 110: Inspect the sessions exported to the ground

STEP 115: Through Wireshark, inspect IRS\_387, NB\_FILES\_EXPORTED.

Observation:

Number of files transferred (NB\_FILES\_EXPORTED) should increment as individual file transfers complete within the export session.

Step:

STEP 20: Nominal wACS Configuration File installed on the wACS.

STEP 30: Nominal GCS Customization File installed on the GSS6000.

STEP 40: Power ON the wACS equipment in Normal Mode Operational State. See the LabNotes>Systems Tester>wACS Modes>Normal Mode>Operational State.

STEP 50: Launch avionics simulators; see Lab Notes>Simulators>Launch Simulators.

STEP 60: Through a tablet or other connected device, log into GSS6000 HMI as Admin; see Lab Notes>GCS>GCS HMI

STEP 70: Set of files exist (2 files/1GB) on the connected device available to be imported to the GSS6000.

STEP 10: Using the GCS HMI, import the set of 2 files/1GB into the GSS6000. See Lab Notes>GCS>GCS HMI>GAMF for additional instruction.

STEP 20: Establish a connection between the wACS and GSS6000 by ensuring all parameters that support Gatelink Wi-Fi connection are established.

STEP 30: Wait 2 minutes for the files to transfer and then inspect the GCS transmission logs through the GCS HMI. For more instruction, see Lab Notes>GCS>GCS HMI>Log Management.

Observation: The file successfully imported using the GCS HMI is transmitted to the ACS Repository "just imported" folder upon establishing a Wi-Fi Gatelink connection.

FLS/DSC

STEP 10: Place test equipment in the Nominal System Test Equipment Setup (with Test Means) with wACS powered on in Shop Mode, Maintenance State.

STEP 20: Prepare SD card with signed wACS FLS formatted according to ARINC 665-2 and containing a valid SHF.

STEP 30: Place SD card with signed wACS FLS and valid SHF into the AFS6480 and wait for completion of the file transfer to the ACS Repository.

STEP 20: Inspect the ACS Repository for the imported FLS.

Observation:

The file names within the FLS load in the ACS Repository are identical to the source files that were imported.

ADBP Tablet feeding

**Setup:**

STEP 10: Set wACS equipment in Normal Mode Maintenance State. See setup procedure in [Lab Notes>Systems Tester>wACS Modes>Normal Mode>Maintenance State].

STEP 20: Dataload wACS with configuration and customization files enabling ADBP only in Ground and use the default AH GILDA configuration.

STEP 30: Power Down the wACS equipment. Procedure in lab notes.

STEP 40: Set wACS equipment in normal Operational mode. See setup procedure in [Lab Notes>Systems Tester>wACS Modes>Normal Mode>Operational State].

**Begin Procedure:**

STEP 10: Set the flight phase to Ground. See[Lab Notes>Simulators>AMC>Opertational Mode] for procedure.

STEP 20: Connect the Tablet to the wACS WAP SSID "CREW" at IP:TCP Port 172.16.5.11:2233.

STEP 30: On the Tablet, request a set of avionics parameters existing in AH GILDA configuration using ADBP tool. See [Lab Notes>ADBP tools>Receive Parameters]

Observation:

The avionics parameters are available to the tablet.