HHT Date and Time Synchronization issue

**Specification & Unit Test Plan**

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1. Preface
   1. Document Purpose

The purpose of this document is to describe the changes, needed to be carried out for HHT Date and Time Synchronization issue. Currently the HHT applications (‘Clock’, ‘Screen Calibration’ and ‘AirBEAM Client’) are not displayed in Model Day application when the device had a cold reboot which affects their reference data download process. Mentioned fix will address it.

* 1. Scope of Document

This document will detail only the changes required in the Model Day and Utilities application which will hold the shortcuts for ‘Clock’, ‘Screen Calibration’ and ‘AirBEAM Client’ applications.

1. Overview
   1. Executive Summary

MC70 devices revert to the incorrect time and date after a cold reboot and also when the battery has been drained down. This forces the stores to reload reference data.

Solution is to add shortcuts for ‘Clock’ and ‘Screen Calibration’ applications under Model Day Screen. Also as an enhancement create shortcut to ‘AirBEAM Client’ application under ‘Utilities’.

* 1. Requirements Matrix

| **Number** | **Requirement** | **Solution Reference** |
| --- | --- | --- |
| 1 | Create shortcuts for ‘Clock’ and ‘Screen Calibration’ applications under Model day screen. | 3.2.1 |
| 2 | Create shortcut for ‘AirBEAM Client’ application under Utilities application. | 3.2.2 |

1. Specification
   1. Overview

On analysis, this issue was found to be affecting the Batch devices (MC70, MC55) as well as the RF devices (MC55). But this issue is more apparent on batch devices. As of now, the device updates its date and time while logging into any of the applications via Goods In, Goods Out and Shelf Monitor. It is because the HHT application is designed in such a way that while logging into any of these applications from the Modal Day screen, the device sends a Sign On Request (SOR) to the TRANSACT. TRANSACT responds to the SOR message with a Sign On Response Message (SNR). It is along with this SNR message that the current time and date of the controller is sent to the HHT device. HHT device then uses the received time and date to update its time and date.

Considering the fact that MC70 and MC55 batch devices does not get latest reference data from controller until they docked in to the cradle. There are high chances that their date and time is out of sync with the controller many times during the week. Date and time is the most critical factor to get latest reference data. This change will enable the store user to overcome reference data load freezing issue.

Below solution will add ‘Align Screen’ and ‘Clock’ applications under Model day screen so that the store people can manually reset the Date and time if it’s not correct and have the reference data reloaded successfully.

* 1. Detail

Following are the changes to fix the Date and Time Synchronization issue.

* + 1. Create shortcuts for ‘Clock’ and ‘Screen Calibration’ applications under Model day screen.

1. **CLOCK.EXE File :-**

Since the APPCENTER accepts only the exe file for the ‘ICON’ attribute, create an empty VB.NET project to hold the icon for the CLOCK application.

1. **ALGSCR.EXE File :-**

Since the APPCENTER accepts only the exe file for the ‘ICON’ attribute, create an empty VB.NET project to hold the icon for the Screen Calibration application.

1. **APPUSER.CFG File :-**

Add the following lines to display ‘Clock’ and ‘Screen Calibration’ application as succession to the existing ones under Model Day screen:

Program "6 Clock" Execute "\Windows\clock.exe"

Program "6 Clock" Arguments

Program "6 Clock" ExeName clock.exe

Program "6 Clock" IconFile "\Program Files\BtStoreApps\CLOCK.exe"

Program "6 Clock" ReadOnly False

Program "6 Clock" AlwaysLaunch False

Program "6 Clock" HideFromUser False

Program "6 Clock" HideMenuBar False

Program "6 Clock" HideDoneButton False

Program "6 Clock" HideStartMenu True

Program "6 Clock" HideSip False

Program "6 Clock" ShowStandardIcons False

Program "6 Clock" AutoStart False

Program "6 Clock" AutoStop False

Program "6 Clock" AddToToolsMenu False

Program "6 Clock" VolumeKeysAllowed True

Program "6 Clock" StartupDelay 0

Program "6 Clock" RelaunchInterval 0

Program "6 Clock" ApprovedWindow \*|\*

Program "6 Clock" RequiredIpAddress

Program "6 Clock" RequiredSSID

Program "7 Align Screen" Execute "\Windows\welcome.exe"

Program "7 Align Screen" Arguments

Program "7 Align Screen" ExeName welcome.exe

Program "7 Align Screen" IconFile "\Program Files\BtStoreApps\ALGSCR.exe"

Program "7 Align Screen" ReadOnly False

Program "7 Align Screen" AlwaysLaunch False

Program "7 Align Screen" HideFromUser False

Program "7 Align Screen" HideMenuBar False

Program "7 Align Screen" HideDoneButton False

Program "7 Align Screen" HideStartMenu True

Program "7 Align Screen" HideSip False

Program "7 Align Screen" ShowStandardIcons False

Program "7 Align Screen" AutoStart False

Program "7 Align Screen" AutoStop False

Program "7 Align Screen" AddToToolsMenu False

Program "7 Align Screen" VolumeKeysAllowed True

Program "7 Align Screen" StartupDelay 0

Program "7 Align Screen" RelaunchInterval 0

Program "7 Align Screen" ApprovedWindow \*|\*

Program "7 Align Screen" RequiredIpAddress

Program "7 Align Screen" RequiredSSID

And a new exe for ‘AirBEAM Client’ under ‘Utilities’ configuration:

Program "5 Utilities" Execute "\Program Files\BtStoreApps\MCUtilities.exe"

Program "5 Utilities" Arguments

Program "5 Utilities" ExeName MCUtilities.exe

Program "5 Utilities" ExeName ABClient.exe

Program "5 Utilities" IconFile "\Program Files\BtStoreApps\MCUtilities.exe"

Program "5 Utilities" ReadOnly False

Program "5 Utilities" AlwaysLaunch False

Program "5 Utilities" HideFromUser False

Program "5 Utilities" HideMenuBar False

Program "5 Utilities" HideDoneButton False

Program "5 Utilities" HideStartMenu True

Program "5 Utilities" HideSip False

Program "5 Utilities" ShowStandardIcons False

Program "5 Utilities" AutoStart False

Program "5 Utilities" AutoStop False

Program "5 Utilities" AddToToolsMenu False

Program "5 Utilities" VolumeKeysAllowed True

Program "5 Utilities" StartupDelay 0

Program "5 Utilities" RelaunchInterval 0

Program "5 Utilities" ApprovedWindow \*|\*

Program "5 Utilities" RequiredIpAddress

Program "5 Utilities" RequiredSSID

1. **UTILITY.APD File :-**

Since there are two new EXEs introduced as part of this enhancement, create a new APD file named UTILITY.APD to pull EXE files from Controller to the HHT device using AirBEAM package builder tool.

**3.2.2** **Create shortcut for ‘AirBEAM Client’ application under Utilities application.**

1. **FRMUTILITIESMENU.VB [DESIGN]**

Add a picture box for AirBEAM Client in frmUtilitiesMenu.VB file as succession to the existing ones.

1. **FRMUTILITIESMENU.VB**

Add the following code to invoke ‘AirBeam Client’ application on clicking the picture box:

Private Sub pbAirBeamClient\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles pbAirBeamClient.Click

Dim ProcessProperties As New Process()

Try

ProcessProperties.StartInfo.UseShellExecute = False

ProcessProperties.StartInfo.FileName = "\Windows\ABClient.exe"

ProcessProperties.Start()

Catch ex As Exception

Console.WriteLine(ex.Message)

End Try

End Sub

Align the position for the Image icon for RF and NRF mode accordingly under ‘New ()’ subroutine as highlighted below:

Sub New()

InitializeComponent()

#If RF Then

pbIPMenu.Visible = False

lblIPInfoMenu.Visible = False

pbMemStatusMenu.Visible = False

lblMemStatusMenu.Visible = False

tbShlfMgmtMenu.Controls.Remove(tbpgFileSysInfo)

pbAirbeamIPConfig.Visible = True

'To make the coordinates matching for PPC.

'v1.1 MCF Defect # 26

If objAppContainer.iOffset = 2 Then

pbAirbeamIPConfig.Location = New Point(50, 21)

lblIPConfg.Location = New Point(13, 120)

'To make the coordinates matching for the newly added image (AirBeam Client)

'V1.2 HHT Date and Time Synchronization issue

pbAirBeamClient.Location = New Point(300, 21)

lblAirBeamClient.Location = New Point(250, 140)

Else

pbAirbeamIPConfig.Location = New Point(31, 21)

lblIPConfg.Location = New Point(13, 69)

'To make the coordinates matching for the newly added image (AirBeam Client)

'V1.2 HHT Date and Time Synchronization issue

pbAirBeamClient.Location = New Point(116, 169)

lblAirBeamClient.Location = New Point(161, 111)

End If

tbShlfMgmtMenu.SelectedIndex = 0 'To make the SysInfo tab default

#End If

End Sub

As we use built-in PROCESS class to use the ‘Start ()’ method, replace the user-defined PROCESS class to PROCESS1 in ‘PROCESS.VB’ file.

1. **MCUTILITIES.EXE**

Generate the EXE separately for RF and NRF mode by setting the following parameters IN Visual Studio:

* For RF, set the compiler options as below:



* For NRF, set the compiler options as below:



Rename MCUTILITIES.EXE to MCUTILS.EXE to place it in the Controller.

1. **APD file**

As there is a change in ‘Utitlities.exe’ file, version number for the existing APD (MC55RFPC, MC55RFPC and MC70APPC) files will have to be incremented to get synchronized from AirBeam tool.

* 1. Error Reporting:

Error handling will be done through the existing code. No additional error handling will be done as part of this fix.

* 1. Handover
     1. Handover File Detail

| **Name** | **Description** | **Size (on 4690)** | **Version (Dimensions)** |
| --- | --- | --- | --- |
| MCUTILS.EXE | Utilities Executable file |  |  |
| ALGSCR.EXE | Align Screen Executable file |  |  |
| CLOCK.EXE | Clock Executable file |  |  |
| FRMUTILITIESMENU.DESIGNER.VB | Visual Basic Source File |  |  |
| FRMUTILITIESMENU.VB | Visual Basic Source File |  |  |
| AIRBEAM.M55 | AirBeam Registry file for MC55 device |  |  |
| AIRBEAM.M70 | AirBeam Registry file for MC70 device |  |  |
| UTILITY.APD | AirBeam Package file for UTILITY |  |  |
| MC55RFPC.APD | AirBeam Package file for MC55 RF |  |  |
| MC55APPC.APD | AirBeam Package file for MC55 BH |  |  |
| MC70APPC.APD | AirBeam Package file for MC70 |  |  |

* + 1. QA/Support Files Updated - Checklist

| **Description** | **Name** | **Updated** |
| --- | --- | --- |
| **Report file numbers used in error reporting** | REPORT.TXT & REPORT.NUM | ❑Yes 🗹 No |
| **List of Pipe usage** | PIPES.TXT | ❑Yes 🗹 No |
| **Event numbers used in error reporting** | EVENT.TXT | ❑Yes 🗹 No |
| **List of Programs and description** | PROGRAMS.DOC | ❑Yes 🗹 No |

* 1. Archive
     1. Archive File Details

| **File Name** | **Description** | **Change** | **Distribution Type** | **Size (on 4690)** | **Version (Dimensions)** |
| --- | --- | --- | --- | --- | --- |
| MCUTILS.EXE | Utilities Executable file |  |  |  |  |
| ALGSCR.EXE | Align Screen Executable file |  |  |  |  |
| CLOCK.EXE | Clock Executable file |  |  |  |  |
| AIRBEAM.M55 | AirBeam Registry file for MC55 device |  |  |  |  |
| AIRBEAM.M70 | AirBeam Registry file for MC70 device |  |  |  |  |
| UTILITY.APD | AirBeam Package file for UTILITY |  |  |  |  |
| MC55RFPC.APD | AirBeam Package file for MC55 RF |  |  |  |  |
| MC55APPC.APD | AirBeam Package file for MC55 BH |  |  |  |  |
| MC70APPC.APD | AirBeam Package file for MC70 |  |  |  |  |

1. Unit Test Plan
   1. Overview

Make sure that the testing controller is working fine with 15B package and the controller

To perform the Unit Testing, the following file should be available

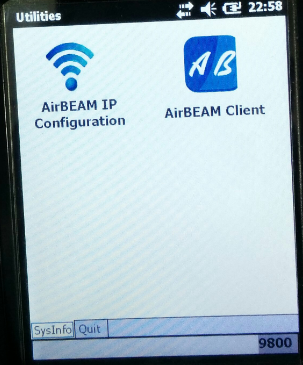
* C:\MC55RF\MCUTILS.EXE
* C:\MC55RF\ALGSCR.EXE
* C:\MC55RF\CLOCK.EXE
* C:\MC55RF\AIRBEAM.M55
* C:\MC55RF\UTILITY.APD
* C:\MC55RF\MC55RFPC.APD
* C:\MC55RF\APPUSER.CFG
* C:\MC55BH\MCUTILS.EXE
* C:\MC55BH\AIRBEAM.M55
* C:\MC55BH\UTILITY.APD
* C:\MC55BH\MC55APPC.APD
* C:\MC55BH\APPUSER.CFG
* C:\MC70\MCUTILS.EXE
* C:\MC70\AIRBEAM.M70
* C:\MC70\UTILITY.APD
* C:\MC70\MC70APPC.APD
* C:\MC70\APPUSER.CFG

**Prerequisite:** Run HHTCONV.286fromC:\ADX\_UPGM\ to convert the required files for synchronization from Controller to HHT.

* 1. Unit Test Scripts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test No.** | **Test Description** | **Expected Result** | **Pass/Fail** | **Actual Result if Fail** | **Problem No. on Database** |
| **Device : MC55 Mode : RF** | | | | | |
| **1** | Verify whether ‘Clock’ and ‘Align Screen’ applications are displayed in ‘Model Day Screen’ as succession to the existing one. | ‘Clock’ and ‘Align Screen’ applications will be displayed in ‘Model Day Screen’ as succession to the existing ones  **Refer** [**Appendix 5.3**](#Utilities3) | PASS |  |  |
| **2** | Verify the functionality of ‘Clock’ application works similar to the actual one. | The functionality of ‘Clock’ application will work similar to the actual one | PASS |  |  |
| **3** | Verify on Closing the ‘Clock’ application, the screen re-directs to ‘Model day’ screen | On Closing the ‘Clock’ application, the screen will re-direct to ‘Model day’ screen | PASS |  |  |
| **4** | Verify the functionality of ‘Align Screen’ application works similar to the actual one | The functionality of ‘Align Screen’ application will work similar to the actual one | PASS |  |  |
| **5** | Verify on Closing the ‘Align Screen’ application, the screen re-directs to ‘Model day’ screen | On Closing the ‘Align Screen’ application, the screen will re-direct to ‘Model day’ screen | PASS |  |  |
| **6** | Verify ‘AirBEAM Client’ application is displayed under Utilities application in second position. | ‘AirBEAM Client’ application will be displayed under Utilities application in second position.  **Refer** [**Appendix 5.1**](#Utilities1) | PASS |  |  |
| **7** | Verify the functionality of ‘AirBEAM Client’ application works similar to the actual one | The functionality of ‘AirBEAM Client’ application will work similar to the actual one | PASS |  |  |
| **8** | Verify on closing ‘AirBEAM Client’ application, the screen redirects to ‘Utilities – SysInfo’ screen | On closing ‘AirBEAM Client’ application, the screen will be redirected to ‘Utilities – SysInfo’ screen | PASS |  |  |
| **9** | Verify that the functionality of all the applications present in Model Day screen works as before | The functionality of all the applications present in Model Day screen will work as before | PASS |  |  |
| **10** | Verify that the new package ‘UTILITY’ is added in AirBeam Configuration screen. | The new package ‘UTILITY’ will be added in AirBeam Configuration screen | PASS |  |  |
| **Device : MC55 Mode : NRF** | | | | | |
| **11** | Verify whether ‘Clock’ and ‘Align Screen’ applications are displayed in ‘Model Day Screen’ as succession to the existing one. | ‘Clock’ and ‘Align Screen’ applications will be displayed in ‘Model Day Screen’ as succession to the existing ones  [**Refer Appendix 5.3**](#Utilities3) | PASS |  |  |
| **12** | Verify the functionality of ‘Clock’ application works similar to the actual one. | The functionality of ‘Clock’ application will work similar to the actual one | PASS |  |  |
| **13** | Verify on Closing the ‘Clock’ application, the screen re-directs to ‘Model day’ screen | On Closing the ‘Clock’ application, the screen will re-direct to ‘Model day’ screen | PASS |  |  |
| **14** | Verify the functionality of ‘Align Screen’ application works similar to the actual one | The functionality of ‘Align Screen’ application will work similar to the actual one | PASS |  |  |
| **15** | Verify on Closing the ‘Align Screen’ application, the screen re-directs to ‘Model day’ screen | On Closing the ‘Align Screen’ application, the screen will re-direct to ‘Model day’ screen | PASS |  |  |
| **16** | Verify ‘AirBEAM Client’ application is displayed under Utilities application in fourth position. | ‘AirBEAM Client’ application will be displayed under Utilities application in fourth position.  **Refer** [**Appendix 5.2**](#Utilities2) | PASS |  |  |
| **17** | Verify the functionality of ‘AirBEAM Client’ application works similar to the actual one | The functionality of ‘AirBEAM Client’ application will work similar to the actual one | PASS |  |  |
| **18** | Verify on closing ‘AirBEAM Client’ application, the screen redirects to ‘Utilities – SysInfo’ screen | On closing ‘AirBEAM Client’ application, the screen will be redirected to ‘Utilities – SysInfo’ screen | PASS |  |  |
| **19** | Verify that the functionality of all the applications present in Model Day screen works as before | The functionality of all the applications present in Model Day screen will work as before | PASS |  |  |
| **20** | Verify that the new package ‘UTILITY’ is added in AirBeam Configuration screen. | The new package ‘UTILITY’ will be added in AirBeam Configuration screen | PASS |  |  |
| **Device : MC70 Mode : NRF** | | | | | |
| **21** | Verify whether ‘Clock’ and ‘Align Screen’ applications are displayed in ‘Model Day Screen’ as succession to the existing one. | ‘Clock’ and ‘Align Screen’ applications will be displayed in ‘Model Day Screen’ as succession to the existing ones  [**Refer Appendix 5.3**](#Utilities3) | PASS |  |  |
| **22** | Verify the functionality of ‘Clock’ application works similar to the actual one. | The functionality of ‘Clock’ application will work similar to the actual one | PASS |  |  |
| **23** | Verify on Closing the ‘Clock’ application, the screen re-directs to ‘Model day’ screen | On Closing the ‘Clock’ application, the screen will re-direct to ‘Model day’ screen | PASS |  |  |
| **24** | Verify the functionality of ‘Align Screen’ application works similar to the actual one | The functionality of ‘Align Screen’ application will work similar to the actual one | PASS |  |  |
| **25** | Verify on Closing the ‘Align Screen’ application, the screen re-directs to ‘Model day’ screen | On Closing the ‘Align Screen’ application, the screen will re-direct to ‘Model day’ screen | PASS |  |  |
| **26** | Verify ‘AirBEAM Client’ application is displayed under Utilities application in fourth position. | ‘AirBEAM Client’ application will be displayed under Utilities application in fourth position.  **Refer** [**Appendix 5.2**](#Utilities2) | PASS |  |  |
| **27** | Verify the functionality of ‘AirBEAM Client’ application works similar to the actual one | The functionality of ‘AirBEAM Client’ application will work similar to the actual one | PASS |  |  |
| **28** | Verify on closing ‘AirBEAM Client’ application, the screen redirects to ‘Utilities – SysInfo’ screen | On closing ‘AirBEAM Client’ application, the screen will be redirected to ‘Utilities – SysInfo’ screen | PASS |  |  |
| **29** | Verify that the functionality of all the applications present in Model Day screen works as before | The functionality of all the applications present in Model Day screen will work as before | PASS |  |  |
| **30** | Verify that the new package ‘UTILITY’ is added in AirBeam Configuration screen. | The new package ‘UTILITY’ will be added in AirBeam Configuration screen | PASS |  |  |

1. Appendix
   1. Utilities – RF



* 1. Utilities – NRF



* 1. Model Day – RF and NRF

