Lufthansa Technik

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RECORD OF REVISIONS

ISSUE	DATE	EFFECT ON		REASONS FOR REVISION
		PAGE	PARA	
00	30 Jan 2013	all	all	Initial Release
01	29 Nov 2016	all	all	Effectivity changed to include CL650, LJ70 and LJ75 Document structure changed completely DRM update procedure included EDID update procedure included Windows image update included Terrain database update procedure included
02	05 Dez 2018	all	all	Add Configuration Server Update
03	22-Jan-2024	all	all	Add Precaution paragraph Add IOS note Add Failsafe Procedure

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1 INTRODUCTION

1.1 PURPOSE

The purpose of this Lufthansa Technik Functional Procedure Description is to provide instructions to load system software onto the **nice**® *HD* system.

1.2 SCOPE

The **nice**® *HD* system is a cabin management and entertainment system providing various functions in the cabin.

This document provides a general overview of the system architecture as required for loading software, it also provides procedures to load and validate the system software.

This document is not intended as a troubleshooting manual and procedures given in this document are based on a fully functional system.

1.3 ABBREVIATIONS

APA	Audio Power Amplifier
BDP	Blu-ray Disc Player
CMS	Cabin Management System
CSDB	Configuration Server Database (system software database)
DRM	Digital Rights Management
EDID	Extended Display Identification Data
EDU	Ethernet Decoder Unit
EEU	Ethernet Encoder Unit
EIU	Ethernet Interface Unit
GCP	Galley Control Panel
GUI	Graphical User Interface
HD	High Definition
LRU	Line Replaceable Unit
PCU	Passenger Control Unit (P/N PCS3009)
MSN	Manufacturer's Serial Number
P/N	Part Number
nice®	Networked Integrated Cabin Equipment
S/N	Serial Number
USB	Universal Serial Bus

1.4 APPLICABILITY

This document is applicable to Challenger 350, Challenger 650, Learjet 70 and Learjet 75 **nice**® *HD* systems.

The screenshots depicting the graphical user interface (GUI) shall be used as a reference only and belong to the CL350 **nice**® *HD* system. Screenshots of CL650, LJ70 and LJ75 GUIs have not been included for clarity reasons but they follow the same schema as the CL350 GUI.

1.5 PRECAUTION

Before installation of an EIU on the aircraft, ensure to disable electrical actuators controlled by the respective EIU via J18.

For aircrafts, a mandatory preparation step is required before switching on the EIU:

Disable all electrical systems controlled by the EIU until the EIU is configured in accordance with the aircraft documentation.

Please see LHT's Service Information Letter SIL-00054 for more detailed information.

1.6 SPECIAL TOOLS

1.6.1 SYSTEM SOFTWARE DATABASE FOR CSDB LOAD

To perform 3.1.3 CSDB Update, a USB stick containing the system software database (CSDB) is required). Check 3.1.1 CSDB Update Required? and 3.1.2 USB Stick Containing CSDB to identify if the right P/N is available.

1. 1ea USB stick with P/N SCDXXXX-YYYYY-Z or P/N SCDXX-YYYYY-ZZZ

1.6.2 INTERNET CONNECTION FOR DIGITAL RIGHTS MANAGEMENT UPDATE

To perform 3.2.3.2 Perform DRM setup an Internet connection is required with either:

1. 1ea cell phone providing internet connection via USB cable (tethering) and 1ea USB hub with external power supply or
2. 1ea Ethernet cable that provides an open (not blocked by corporate firewall) Internet connection and 1ea USB to Ethernet adapter.

Note: Not all USB to Ethernet adapters are supported. Example for a supported model: Belkin USB2.0 Ethernet Adapter model F4U061.

Note: iPhone devices with IOS14 or later might not work for this function on old software versions due to changes implemented by Apple with IOS14.

1.6.3 HDMI SOURCES FOR EDID UPDATE

To perform 3.2.4.2 Perform EDID setup in order to update the Extended Display Identification Data (EDID) on the Ethernet Encoder Units (P/N EEU0910-001-001), one or more HDMI sources need to be connected to one or more available HDMI input ports. The source type and video signal resolution are not relevant for this update.

1. 1ea or more external HDMI video sources with HDMI output
2. 1ea or more short high quality HDMI cable

Note: iDevices (iPods, iPads, iPhones) are known to work unreliably with this procedure due to their HDMI implementation. If you don't have other HDMI sources available, make sure to use short, high quality HDMI cables with iDevices.

1.6.4 TOOLS FOR WINDOWS UPDATE

To perform 3.2.5.2 Perform Windows Update, a Windows image is required. The Windows image required for each specific MSN is contained in the USB stick together with the system software database (CSDB). Check 3.1.1 CSDB Update Required? and 3.1.2 USB Stick Containing CSDB to identify if the right P/N is available.

1. 1ea USB stick with P/N SCDXXXX-YYYYY-Z or P/N SCDXX-YYYYY-ZZZ

1.6.5 TOOLS FOR NICEVIEW™ TERRAIN DATABASE UPDATE

To perform 3.2.6.2 Perform **niceview**™ Terrain Database Update, a hard drive containing the database is required.

1. Hard drive P/N FTS0407NVT004 or later version

Note: Learjet 70 and Learjet 75 have a simplified **nice**view™ *version as baseline called* **nice**view™ *lite, which does not require a terrain database update.* **nice**view™ *is installed on some Learjets as an option.*

2 SYSTEM OVERVIEW

2.1 GENERAL

The **nice**® *HD* system is an Ethernet based Cabin Management and Entertainment System. The software is provided by Lufthansa Technik with the approval of Bombardier and provided on a USB memory stick.

2.2 CONFIGURATION SERVER

The software for the whole system (CSDB or Configuration Server Database) is stored on a centralized server, known as the Configuration Server. This server is hosted on the Ethernet Interface Unit 0x01. The Configuration Server constantly monitors all LRUs and verifies that the software of each one matches the contents of the Configuration Server.

In case that multiple LRUs with the same P/N are installed, each LRU is uniquely identified by its “ID” which is determined by jumpers installed in the aircraft wiring harness. Simple LRUs (i.e. Switch Panels) requiring no system software are not monitored by the Configuration Server.

Loading software to the system happens in two steps:

1. The new CSDB is loaded onto the Configuration Server.
2. Every LRU for which new software is available loads it from the Configuration Server.

Both steps are triggered manually. Control of the Configuration Server functions is provided via the Graphical User Interface (GUI) on the Galley Control Panel (GCP). The GCP is a touchscreen installed in the galley that provides system wide control functions. All functions related to the Configuration Server are accessible in the “equipment” menu, located on the home screen (Figure 1).

Figure 1: CMS home screen “Equipment menu access”

The submenu below “equipment” is a list containing multiple entries, one of which is “cms equipment” which provides control of the Configuration Server functions.

“cms equipment” shows a list of all LRUs and their current status. The top item in the list will show the P/N of the CSDB currently installed on the Configuration Server (Figure 2).

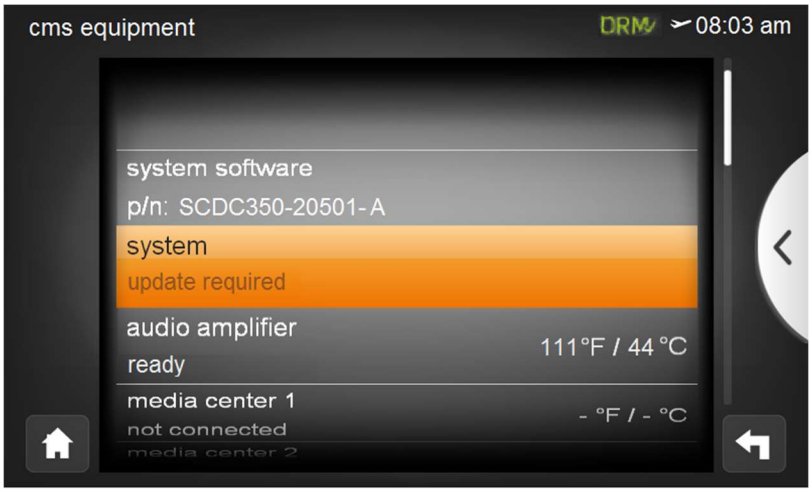

Figure 2: CMS equipment menu

The status indicated for each LRU will be one of the following:

- “ready”: The LRU is reporting on the network and its software matches the one on the Configuration Server.
- “update required”: The LRU is reporting on the network, but its software does not match the one on the Configuration Server.
- “updating”: The LRU is currently loading new software from the Configuration Server.
- “not connected”: The LRU has not reported on the network since system start.

2.3 CONFIGURATION SERVER DATABASE

If a USB memory stick with a valid CSDB is inserted into the USB port of the maintenance panel the system will recognize this CSDB and will indicate that there is an update available. The maintenance panel is located in the wardrobe or galley area, depending on the aircraft (Figure 3). This indication is done by changing the status of the “system software” item in the “cms equipment” menu. Instead of showing the installed CSDB P/N, an “update available” message will be shown (Figure 4).

Figure 3: maintenance panel

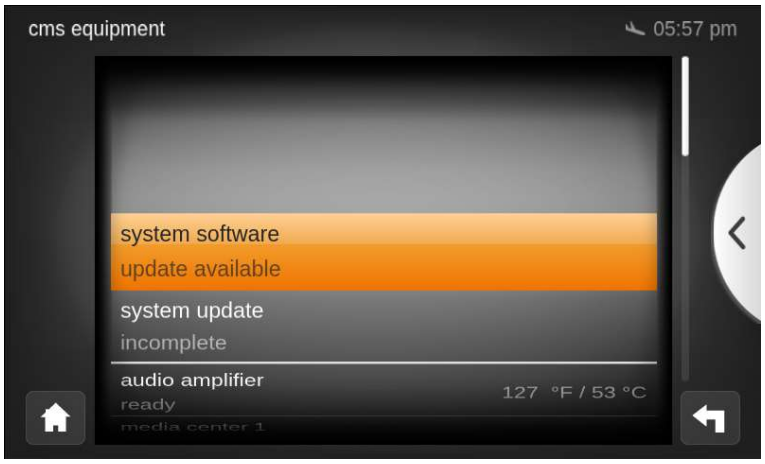

Figure 4: CMS equipment menu / CSDB update available

Selecting “system software” opens the download screen which shows the currently installed CSDB P/N (“current p/n”), the available update CSDB P/N (“update p/n”) and the button to start the download. Pressing “update” will start the CSDB copy from the USB stick. While copying, a progress bar and “updating” status message indicate the status of the operation (Figure 5).

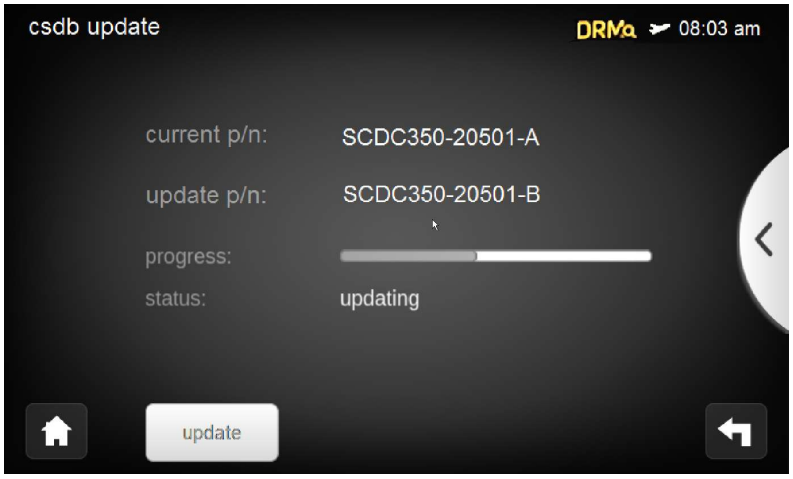

Figure 5: System Software page / CSDB update in progress

After the copy is completed, the status message “idle” together with the complete progress bar will be shown (Figure 6).

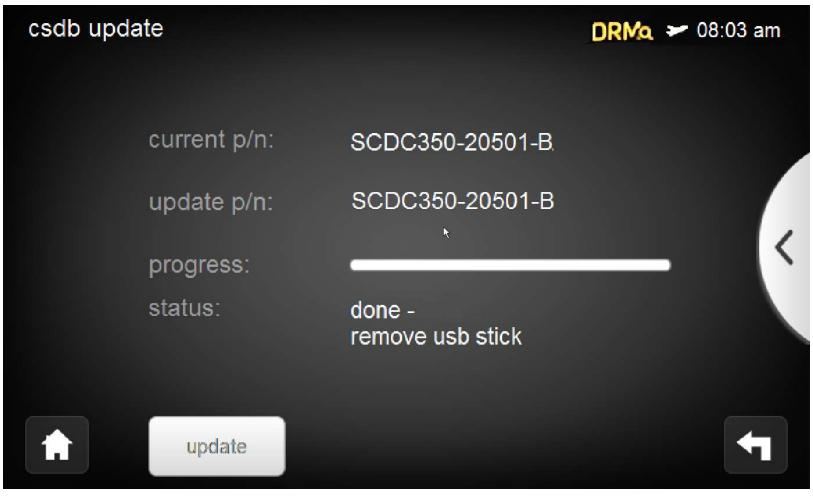

Figure 6: System Software page / CSDB Update Completed

Additionally, “current p/n” will now match the P/N of the updated CSDB (“update p/n”).

Once the new CSDB has been successfully copied to the Configuration Server it is available for other LRUs.

2.4 LRU SOFTWARE UPDATE

Each LRU retrieves its software from the CSDB and stores it permanently in a non-volatile memory. This software is only valid for the location ID that the LRU was installed in when it was updated. The location is sensed via the ID jumper wire in the aircraft wiring harness. The ID setting is unique for each location of LRUs with the same P/N. When an LRU is removed from one location and gets installed in another, the LRU senses the location ID change and deletes its configuration. It then defaults to a predefined “failsafe” configuration. The failsafe configuration allows the LRU to communicate to the Configuration Server and download the correct configuration for the new location ID, but does not enable any additional functions. This feature is particularly important for LRUs with aircraft interfaces, like the Ethernet Interface Unit, as the failsafe configuration prevents it from activating the wrong control relays.

When operating in failsafe mode, the status of the LRU indicates “update required” on the “cms equipment” menu. The update does not occur automatically and must be triggered manually. Selecting the LRU item from the list in “cms equipment” shows detailed status information of the LRU (Figure 7).

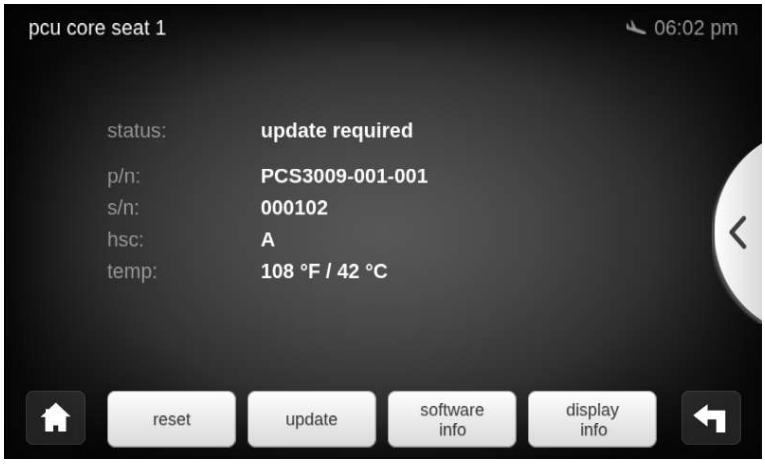

Figure 7: LRU status screen “update required”

It also provides the controls to reset the LRU, to trigger the update, and to show a software info screen and a display info screen (if a screen is connected to the LRU).

After the update has been triggered and the LRU has downloaded the correct software for the current location ID, the LRU is fully functional and its status indicates “ready” (Figure 8).

Figure 8: LRU status screen “ready”

2.5 DIGITAL RIGHTS MANAGEMENT

nice® *HD* uses a Digital Rights Management (DRM) system to protect video within the system. Video that is protected (like Blu-ray disc movies or video from a HDMI input with active High-bandwidth Digital Content Protection) is encrypted by the video encoder (EEU or BDP) before being distributed to the network.

Each decoder (EDU or PCS) decrypts the video before displaying it on the cabin monitors. The encoder and decoder must use the same key for encrypting and decrypting, otherwise the video cannot be displayed. This key is unique for each a/c.

During the update process each LRU downloads this key via Internet from LHT's DRM License Server, as Lufthansa is not allowed to store these keys in the system software database. This download only needs to happen once in order to install the key. As long as the LRU remains on the same a/c the key is valid and does not need to be downloaded again.

LRUs may be swapped between different locations within the same a/c without the need for another key update. Replacing an LRU with a spare part will require a key update of the newly installed LRU if its last location was not this same a/c.

The following components require the DRM key for their operation with protected content:

- Ethernet Encoder Unit (P/N EEU0910-XXX-XXX)
- Blu-ray Disc Player (P/N BDP3009-XXX-XXX)
- Ethernet Decoder Unit (P/N EDU3009-XXX-XXX)
- PCU Core Module Two (P/N PCS3009-XXX-XXX)
- Ethernet Interface Unit (P/N EIU3009-XXX-XXX)
- Audio Power Amplifier (P/N APA3009-XXX-XXX)

An internet connection to the **nice**® *HD* system is required for this download

2.6 EDID DATA

Extended Display Identification Data (EDID) is defined by a standard published by the Video Electronics Standards Association and is a data structure provided by digital displays to describe their capabilities to the connected video sources.

To update the EDID data on the Ethernet Encoder Units (p/n EEU0910-001-001), a valid HDMI source needs to be connected to the respective HDMI input ports.

The source type and video signal resolution is not relevant for this process.

2.7 WINDOWS IMAGE

A part of the media center (BDP3009) requires a Windows image for its operation. The specific Windows version for each MSN is delivered on the same USB stick as the CSDB.

To copy the Windows image into the media center, the USB stick has to be inserted into the USB port on the front side of the media center (Figure 9) NOT into the maintenance port used for CSDB update. As both the Windows and the **nice**view™ terrain database updates require the same USB port on the front side of the media center, these updates have to be performed sequentially.

Figure 9: media center with USB port covered by dust cap

2.8 NICEVIEW™ (MOVING MAP SYSTEM) TERRAIN DATABASE

niceview™ (moving map system) runs on the media center 0x01 (BDP3009). The terrain data is delivered as loose equipment in a hard drive (P/N FTS0407NVT004 or later) and needs to be connected into the USB port on the front side of the media center (Figure 9) NOT into the maintenance port used for CSDB update. As both the Windows and the **nice**view™ terrain database updates require the same USB port on the front side of the media center, these updates have to be performed sequentially.

While CL350 and CL650 are equipped as baseline with **nice**view™, LJ70 and LJ75 have a simplified **nice**view™ version as baseline called **nice**view™ lite, which does not require a terrain database update. **nice**view™ is installed on some Learjets as an option.

2.9 SOFTWARE INFO

The software info screen shows a list of all software modules running on a LRU with their names and P/Ns (Figure 10).

It can be accessed on the GCP, icon “equipment”, “cms equipment”, selecting an LRU and selecting the “software info” button.

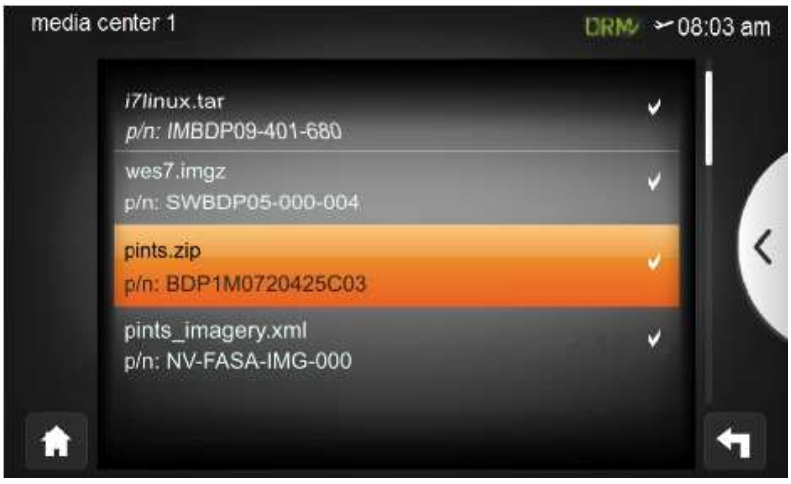

Figure 10: LRU software info screen

2.10 DISPLAY INFO

Video and control displays are not attached to the network by an Ethernet connection. Therefore, they are unable to report their P/N, S/N and temperature directly to the server. The information for each display must consequently be reported through the LRU information page of the device to which the display is connected. For each LRU with an attached display unit, the “display info” screen shows information relevant to its attached display. This screen is only available for LRUs with an attached display (Figure 11).

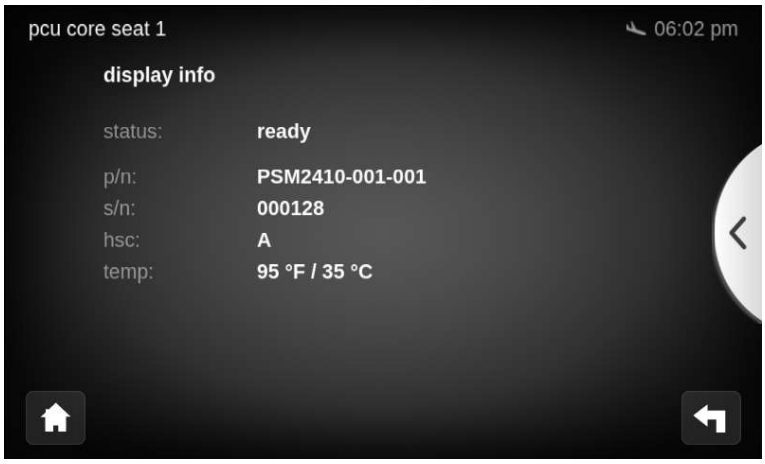

Figure 11: LRU display info screen

3 PROCEDURES

The workflow diagram in Figure 12 depicts the series of questions and actions that define how work should be done to load **nice**® *HD* system software (CSDB) and to update LRUs with this software. There are four components in the diagram:

1. “Start” and “End”: where the process starts and finishes.
2. Diamond-shaped boxes: questions that must be answered with yes or no to move in one or the other direction.
3. Light blue boxes: actions that need to be performed to move forward
4. Orange boxes: they reference to the section of this document where the specific steps are described to answer a question or to perform an action.

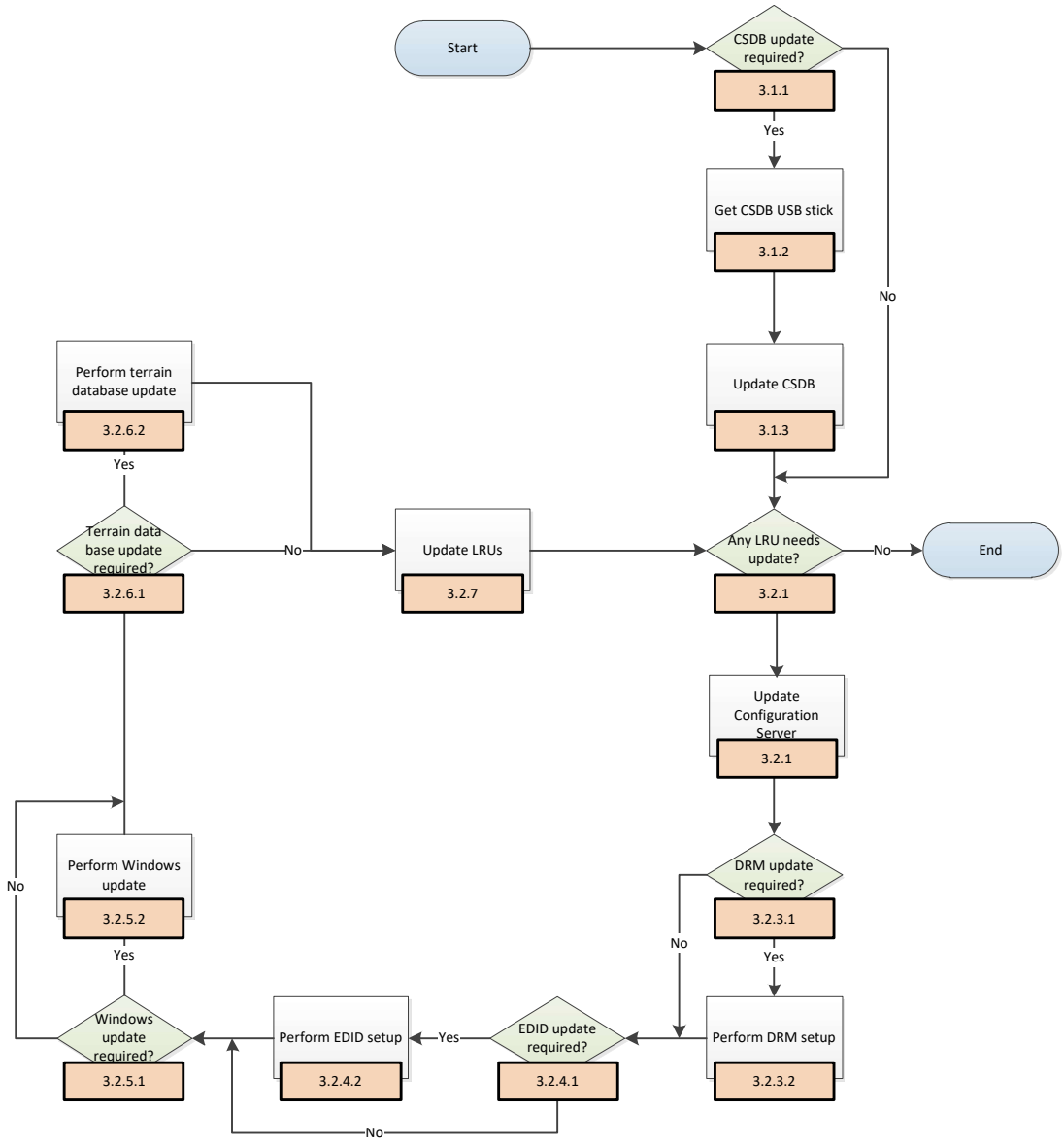

Figure 12: CSDB load and LRU update flow chart

3.1 CSDB UPDATE PROCEDURE

3.1.1 CSDB UPDATE REQUIRED?

a) On the GCP, select “equipment” (Figure 1), “cms equipment”, “system software” (Figure 2) and note the P/N shown in “current p/n”. This is the CSDB currently loaded on the aircraft.

b) Check in your aircraft documentation (available service bulletins for your MSN):

1. if the “current p/n” is meant for your aircraft (“current p/n” must contain the MSN, see 3.1.2 USB Stick Containing CSDB for more details on system software schemes) and
2. if it is the last released version.

c) If “current p/n” is the last released version for your MSN, proceed with 3.2 LRU Update Procedure.

d) If “current p/n” is not the last released version for your MSN proceed with 3.1.2 USB Stick Containing CSDB.

3.1.2 USB STICK CONTAINING CSDB

a) Find the USB stick with the last version of the CSDB for your MSN. If you don’t have it, contact Bombardier’s Customer Response Centre or your Field Service Representative to get it.

b) Make sure you have a USB stick with a CSDB that is configured for the specific aircraft type and MSN you are working with. Do not install a CSDB whose aircraft type and MSN fields do not match with the MSN of the aircraft where it is going to be installed.
CSDB’s P/Ns may follow two different schemes:

a. SCDXXXX-YYYYY-Z
XXXX: Aircraft type. C350 for Challenger C350; C650 for Challenger 650; LJ7x for Learjet 70 or 75
YYYYY: MSN (4 or 5 digits long)
Z: software version

b. SCDXX-YYYYY-ZZZ
XX: Aircraft type. C3 for Challenger C350; C6 for Challenger 650; L7 for Learjet 70 or 75
YYYYY: MSN (4 or 5 digits long)
ZZZ: software version

c) Make sure the software version you are going to install is the last released version for your aircraft’s MSN according to the aircraft documentation (service bulletins). Contact Bombardier’s Customer Response Center or your Field Service Representative if unsure.

3.1.3 CSDB UPDATE

a) Power the aircraft busses and turn on the CMS equipment.

b) Wait for about 5 minutes to ensure proper system status reporting.

c) On the Galley Control Panel (GCP) home menu select the “equipment” icon (Figure 1). To access the home menu (if not already shown) use the “home” button which is available on each menu page (Figure 13). The “equipment” menu will be shown.

Figure 13: home button

d) Select “cms equipment”. The current system software P/N and the status of all LRUs will be shown (Figure 14).

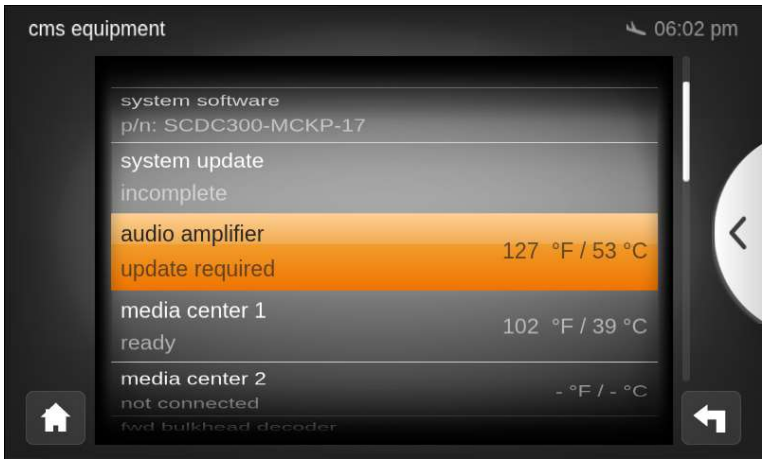

Figure 14: “CMS equipment” menu

e) Insert the USB memory stick containing the CSDB into the USB port on the CMS maintenance panel (Figure 3).

f) Wait for “system software” to display “update available” (Figure 4).

g) Select “system software update available”, the “csdb update” menu will be shown (Figure 5).

h) On “csdb update”, the currently installed CSDB P/N (“current p/n”) and the new CSDB P/N (“update p/n”) are shown.

i) Select “update”.

j) Wait for the update to finish, the bar will show the progress. The total time for an update is normally 5 min but it may take up to 10 min.

k) Wait for the status to change to “done – remove usb stick” (Figure 6).

l) Remove the USB memory stick from the USB port.

m) Wait for “csdb update” screen to disappear and the “cms equipment” menu to show up.

n) Verify that the new P/N is reported on the “system software” entry.

The CSDB update procedure has been completed.

Note: If the CSDB on the USB stick is corrupted, this will be detected and the CSDB will be rejected by the system.

Note: By following this procedure the CSDB package has been copied in EIU 0x01 but so far no LRU has been updated with this software, not even EIU 0x01 itself, which still runs with the previously installed software. The update of LRUs has to be triggered manually by following 3.2 LRU Update Procedure.

3.2 LRU UPDATE PROCEDURE

3.2.1 CONFIGURATION SERVER UPDATE

Before updating an LRU, ensure that EIU 0x01 (FWD Ethernet Interface unit) shows ready. If EIU 0x01 shows “update required”, perform EIU 0x01 update acc. to 3.2.7

The configuration server is running on the EIU 0x01 and without an update of this server the update on any LRU besides the EIU 0x01 will not have any effect.

3.2.2 GENERAL SETUP

a) Power the a/c busses and turn on the CMS equipment.

b) Wait for about 5 minutes to ensure proper system status reporting.

c) On the GCP, navigate to “equipment”, “cms equipment”, “system software”. If all LRUs are reported as “ready”, you may skip 3.2 LRU Update Procedure.

Note: After a new CSDB has been installed, it will take a few minutes before the status of each LRU has been updated. During this time the status might be reported as “ready” although an update is available.

3.2.3 DRM UPDATE

3.2.3.1 DRM Update Required?

If any of the LRUs that require a DRM key (see 2.5 Digital Rights Management for a list) do not have the specific key for its aircraft’s MSN or if they have the wrong key (if, for example, the LRU was previously installed in another aircraft), a DRM key update will have to be performed. To check whether any unit needs a DRM update:

a) Select the “cms equipment” page on the Galley Control Panel.

b) On the page header a DRM logo might be shown to indicate that a DRM update is required.

c) If no logo is shown, all LRUs have the right DRM key and there is no need to perform a DRM update. Skip 3.2.3 DRM Update.

If a DRM update is required, a DRM logo will be shown on the equipment page. There are four different conditions that are shown with different icons in the page header:

1. No icon: No DRM update is required.

2. DRM License Server connection not available: 

This icon is shown when an internet connection is required, but not available, and the system is not even trying to establish the required connection. This icon indicates that the Ethernet Interface Unit (P/N EIU3009-001-001) is not updated. In this case, the software that establishes the connection to the DRM license server is not installed. Proceed with 3.2.7 LRU Update to update the EIU and go back to 3.2.3 DRM Update afterwards.

3. Trying to establish DRM License Server connection: 

The internet connection is required and the system is trying to establish the connection to the DRM License Server. Wait for this icon to appear on the CMS equipment page prior to tethering the internet device.

4. Connection to DRM License Server made: 

The system has successfully established the link to Lufthansa’s DRM server and the DRM key update can now be performed.

If the amber DRM logo is shown, proceed with 3.2.3.2 Perform DRM setup.

Note: the connection to Lufthansa’s DRM server is a secure one. For this reason, it needs to be stable. A relatively unstable internet connection will make the green DRM logo appear (indicating there is internet connection) but the DRM update might not work. If a green DRM logo is shown and after a DRM update the LRU still needs a DRM update according to 3.2.3.1 DRM Update Required?*, repeat the update a couple of times. If it still doesn’t work try a more stable connection.*

3.2.3.2 Perform DRM setup

Establish an internet connection for the DRM update via the USB port on the CMS maintenance panel (Figure 3). The tools referenced in 1.6.2 Internet Connection for Digital Rights Management Update might be required for the connection, depending on the chosen connection method (see below). The amount of data transferred during the update is less than 100 kByte per DRM key. There are three options to establish an internet connection:

1. Direct Ethernet cable connection

2. Direct cell phone tethering

3. Cell phone tethering via USB hub

Choose one of the methods depending on whether an EIU needs a DRM update or not (3.2.3.1 DRM Update Required?) according to Table 1.

	Direct Ethernet cable	Direct cell phone tethering	USB hub
EIU DRM update required	✓	✗	✓
EIU DRM update not required	✓	✓	✗

Table 1 DRM update. Internet connection methods

1. Direct Ethernet cable:

a) Connect the USB to Ethernet adapter to the USB port on the CMS maintenance panel (Figure 3).

b) Use an Ethernet cable connection to the internet and connect this via the USB to Ethernet adapter to the USB maintenance port (Figure 3).

c) Wait until the DRM logo on the page header of the “cms equipment” page changes to green.

2. Direct cell phone tethering:

Note: iPhone devices with IOS14 or later might not work for this function on old software versions due to changes implemented by Apple with IOS14.

a) Connect the cell phone with the USB cable to the CMS maintenance port.

b) On the cell phone, activate the USB tethering function.

c) Check cell phone display and give permission for connection if required.

d) Wait until the DRM logo on the page header of the “cms equipment” page changes to green.

Note: Make sure to use a short USB cable to connect the phone to the maintenance port. The total USB cable length is limited; the USB cable has an a/c side installed harness that connects the USB maintenance port with the EIU, this a/c harness limits the supported remaining cable length to 3ft (1m).

3. Cell phone tethering via USB hub (Figure 15).

a) Connect the host port of the USB hub to the USB port on the CMS maintenance panel (Figure 3).

b) Connect the cell phone via USB cable to the USB hub.

c) Make sure that external power is supplied to the USB hub.

d) On the cell phone, activate the USB tethering function.

e) Check cell phone display and give permission for connection if required.

f) Wait until the DRM logo on the page header of the “cms equipment” page changes to green.

Note: the USB hub is used to prevent cell phones to terminate the tethering connection when the connected LRU reboots.

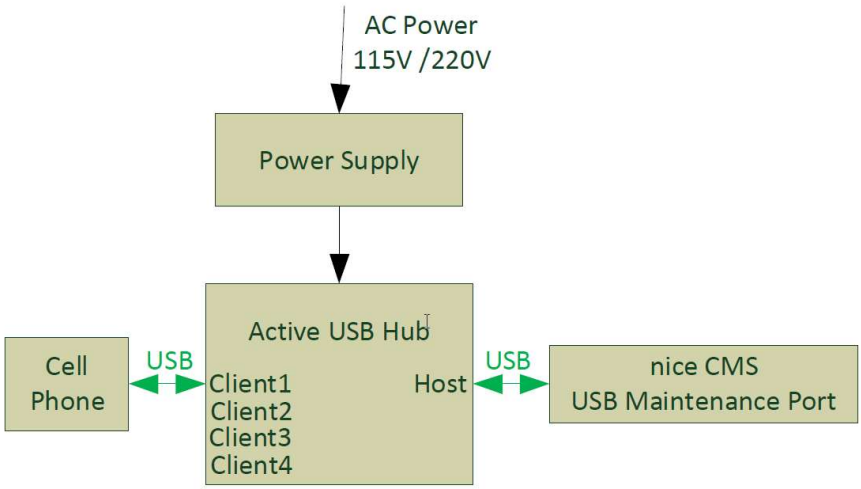

Figure 15: USB hub setup for DRM update

3.2.4 EDID UPDATE

3.2.4.1 EDID Update Required?

If an EEU requires an EDID update, it will report as “update required” on the GCP and the file “edid1.bin” will show a cross next to it. To check whether any EEU needs a DRM update:

a) On the GCP, select the “equipment” icon, select “cms equipment” and scroll down to check the status of the Ethernet Encoder Units (P/N EEU0910-001-001).

b) If all EEUs are “ready”, skip 3.2.4 EDID update.

c) If any EEUs are “update required”, select them, go to “software info” and scroll down to file “edid1.bin”. If the EDID file on any EEU has a cross next to it, continue with 3.2.4.2 Perform EDID setup. If the EDID file on all EEUs has a check mark next to it or if no EDID file is shown, skip 3.2.4 EDID update.

3.2.4.2 Perform EDID setup

a) Connect the video sources to the HDMI inputs of the EEUs that show a cross next to the EDID file with HDMI cables.

b) Power up the video sources.

Note: As there might be more than one EEU requiring an EDID update you may use one video source and one HDMI cable to update all EEUs sequentially, or use more than one cable and video source and update more than one EEU at the same time.

Note: In case the connected source does not provide enough power to the HDMI port of the EEU, the update will fail.

3.2.5 WINDOWS UPDATE

3.2.5.1 Windows Update Required?

a) On the GCP, select the “equipment” icon, select “cms equipment” and scroll down to check the status of the media center (P/N BDP3009-001-001).

b) If it is “ready”, skip 3.2.5 Windows Update. If it is “update required”, select it, go to “software info” and scroll down until you find file wes7.imgz. If this file has a check mark next to it, skip 3.2.5 Windows Update. If it has a cross next to it, continue with 3.2.5.2 Perform Windows Update.

3.2.5.2 Perform Windows Update

a) Insert the USB memory stick containing the CSDB and the Windows image into the USB port on the front side of the media center (Figure 16) NOT into the maintenance port used for CSDB update.

Figure 16: Correct USB port for Windows and terrain database updates

b) Proceed with 3.2.7 LRU Update to update the media center.

Note: Since the media center does only have one USB port on the front side, either the Windows update section or section 3.2.6 ***niceview****™ (Moving Map System) Terrain Database* Update *can be performed at a time. Ensure to prepare and perform (if needed) the Windows image update first!*

Note: Since there might be two media centers in the system, 3.2.5 Windows Update might have to be repeated for the second unit after the first one has been updated.

3.2.6 NICEVIEW™ (MOVING MAP SYSTEM) TERRAIN DATABASE UPDATE

3.2.6.1 niceview™ Terrain Database Update Required?

a) On the GCP, select the “equipment” icon, select “cms equipment” and scroll down to check the status of the media center (P/N BDP3009-001-001).

b) If it is “ready”, skip 3.2.6 **niceview**™ (Moving Map System) Terrain Database Update.

c) If it is “update required”, select it, go to “software info” and scroll down until you find file “pints_imagery.xml”. If this file has a check mark next to it, skip 3.2.6 **niceview**™ (Moving Map System) Terrain Database Update. If it has a cross next to it, continue with 3.2.6.2 Perform **niceview**™ Terrain Database Update.

3.2.6.2 Perform niceview™ Terrain Database Update

a) Connect the terrain database hard drive P/N FTS0407NVT004 or later version to the USB port at the front of the media center (Figure 16) NOT into the maintenance port used for CSDB update.

b) Select **nice**view™ to be displayed on any display to see the ongoing progress.

c) Proceed with 3.2.7 LRU Update to update the media center.

The data transfer of the new terrain data will be initiated automatically in the system update procedure (after the media center software update process has been finished).

Note: The transfer, once started, is processed independently to the automated system update and may take up to 2 hours.

If **nice**view™ has been selected on a display, the ongoing update will be indicated with the message:

"Terrain update in progress ... Do not disconnect USB device"

WARNING: DISCONNECTION OF THE TERRAIN HARD DISK DRIVE DURING THE PROCEDURE MAY RESULT IN DAMAGE OF BDP3009.

niceview™ will be restarted automatically after the terrain update is finished and the **nice**view™ welcome screen will be displayed on the cabin monitors.

Note: If the aircraft is equipped with two media centers (BDP3009), 3.2.6 **niceview**™ (Moving Map System) Terrain Database Update *is only required for media center 1 (BDP3009 0x01).*

3.2.7 LRU UPDATE

The LRU update procedure needs to be performed after a new CSDB has been loaded or following any LRU replacement or location swap.

a. On the GCP select the “equipment” icon (Figure 1) and go to “cms equipment”.

b. Scroll down until the LRU to be updated is highlighted. Verify that the status is “update required” (Figure 17). If it shows “ready” there is no need to perform the procedure.

Figure 17: “update required” indication on “cms equipment”

c. Select the LRU to be updated, the LRU status screen will show up (Figure 7).

d. Select “update”.

e. Verify that the status changes to “updating” (Figure 18).

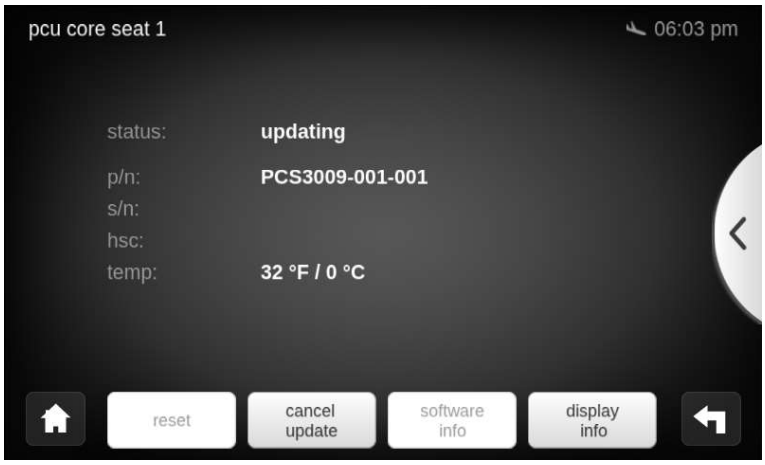

Figure 18: LRU update in progress

f. Wait until the status changes to “ready”. The LRU update is completed (Figure 16).

Figure 19: LRU update completed

Note: The PCU Core Module (P/N PCS3009-001-001) is a single LRU that controls two seat monitors. Therefore each PCU Core Module S/N is listed twice in the LRU list, with a unique entry for each seat. The update of the PCU Core Module has to be done per seat.

3.2.8 FAIL SAFE

In case that you swap or replace Ethernet Interface Unit #1 (EIU#1), the attached display shows the default mode. The fail-safe GUI reports an invalid CSDB for the system software (Figure 20).

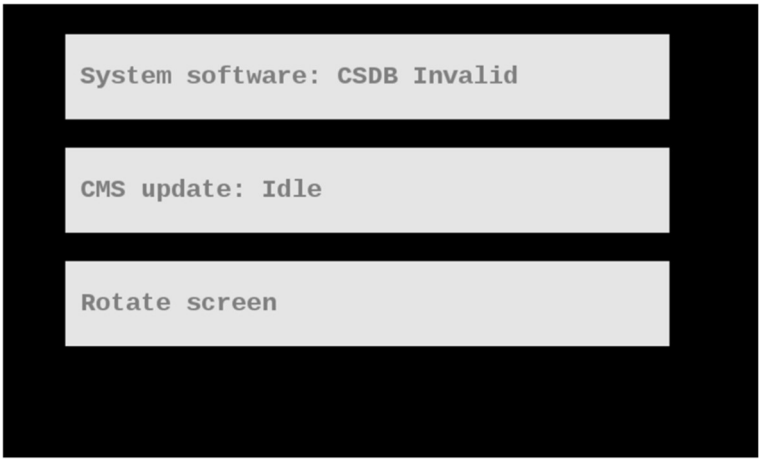

Figure 20: Fail-safe GUI main page

To recover the system from this normal condition please follow this procedure

a. plug a USB mass storage device with a valid CSDB into the USB port of the maintenance panel.

b. Verify that System Software changes to “Update available” (Figure 21).

Figure 21: indication “CSDB available” on Fail-safe GUI main page

c. select “System software: Update available”.

Figure 22: Fail-safe GUI CSDB Upload page

d. Select “Update CSDB” to initiate the software upload to the system.

e. The GUI shows the upload progress (Figure 23).

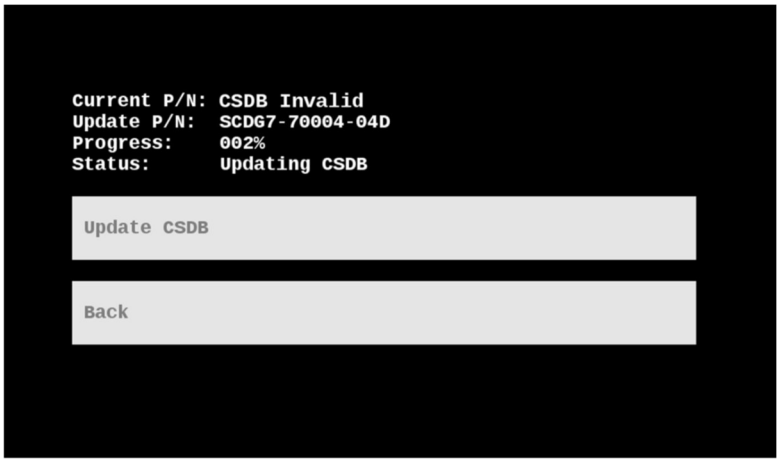

Figure 23: indication “upload progress” on Fail-safe GUI CSDB Upload page

f. Wait until the status changes to “idle” (Figure 24).

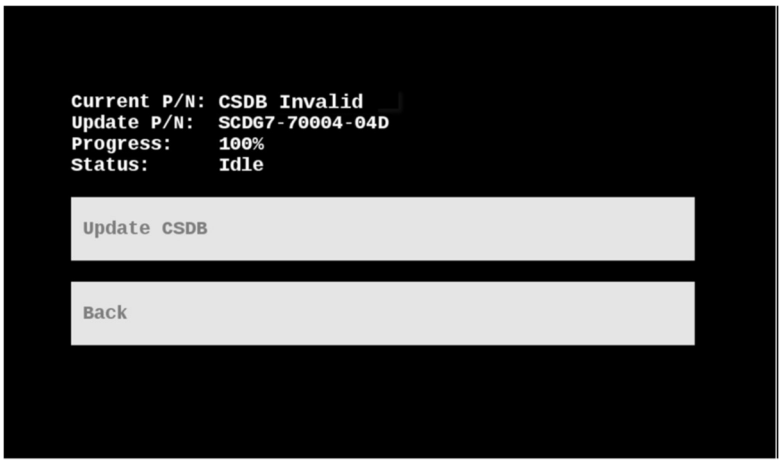

Figure 24: status “idle” on Fail-safe GUI CSDB Upload page

a. It may take a few seconds before “Current P/N:” gets populated with the software part number.

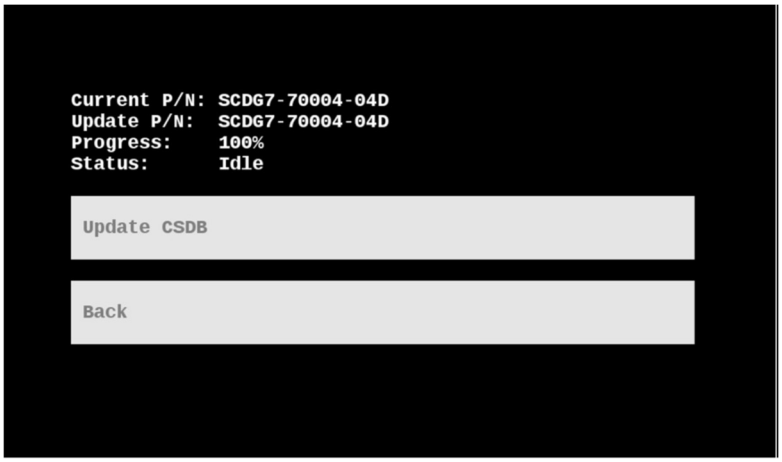

Figure 25: indication “upload finished” on Fail-safe GUI CSDB Upload page

b. The CSDB update is completed.
c. Remove the USB mass storage device from the maintenance port
d. Select “Back” to go to the fail-safe GUI main page.

Figure 25: Fail-safe GUI main page

a. Check that the uploaded CSDB in the “System software” field is correct (Figure 26).
   WARNING: DO NOT PRESS “CMS Update” without correct installed CSDB.
   IT CAN RESULT IN A DAMAGED LRU.

b. Select “CMS update”

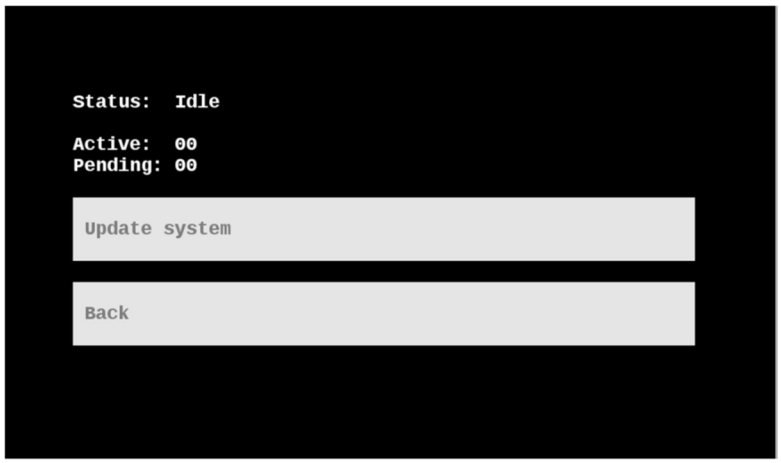

Figure 26: Fail-safe GUI CMS Update Page

c. Select “Update system” to initiate the update process to the EIU#1 (which hosts the configuration server).

d. The GCP will power off and stay dark during the complete EIU update.

WARNING: THE GCP WILL STAY DARK. DO NOT TURN OFF CABIN POWER. THIS OPERATION CAN TAKE UP TO 20 MINUTES.

e. Once the update has been completed, the normal system User Interface will come up (Figure 1)

f. In case DRM is required in the EIU#1 configuration, the status will show “update required” and an amber DRM icon will be present on the upper right side of the GCP. The DRM update procedure can now be carried out. If no DRM is required, the EIU#1 status should be “ready”.