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AgustaWestland Products

SERVICE BULLETIN

N° 189-240

DATE: June 11, 2020

REV. : A - October 25, 2021

TITLE

ATA 46 - INSTALLATION OF AVIONIC FLIGHT SOFTWARE RELEASE PHASE 6.0

REVISION LOG

Helicopters already compliant with previous issues of this Service Bulletin do not need any additional action.

Revision A has been issued to introduce the updated Cabin PC application software release 1.6.3 P/N 8G4620FS0106. “Materials Information” and “Accomplishment Instructions” sections have been updated accordingly.

1. PLANNING INFORMATION

A. EFFECTIVITY

All AW189 helicopters equipped with Avionic Flight Software Release Phase 3.0, Phase 4.0 or Phase 5.0.

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

- Compliance with SB189-115 is required for helicopters not equipped with kit transponder ADSB-OUT DO-260B P/N 8G3450F00811 or not equipped with transponder DO-260B P/N 622-9210-551.
- Only for AW189 helicopters equipped with Avionic Flight Software Release Phase 3.0, the AW189 Electronic Engine Control Unit Software (EECU) Version 5.00 (refer to GE SB 74-0003 R00) must be installed with Avionic Flight Software Release Phase 6.0.
- In accordance with EASA Rules, this change affects the Operational Suitability Data - Flight Crew Data (OSD-FCD); therefore the flight crew to operate helicopter equipped with Avionic Software Phase 6.0 shall be trained i.a.w. OSD-FCD. The latest issue of the OSD-FCD publication is available at “MyPublication” section of Leonardo AW Customer Portal.

D. REASON

This Service Bulletin is issued in order to provide the necessary instructions on how to perform the Software Release Phase 6.0 installation.

E. DESCRIPTION

This Service Bulletin provides instructions on how to install the Software Release Phase 6.0 certified by Leonardo Helicopter.

The Avionic Flight Software Phase 6.0 introduces changes and new functions respect to the approved configuration Software Phase 5.0.

The following improvements will be introduced:

- AFCS changes:
    - Optimized performance of collective safety function for ITT and NGc control;
    - AFCS PR fix

- Flight Management System (FMS) in AMMS changes:
    - FMS New Functions:
        - GBAS Landing System (GLS) approach (GAST-C);
        - Multi-sensor for FMS navigation;
    - GLONASS position (latitude and longitude) display on MCDU.
    - FMS minor changes and PR fix.
- Vehicle Monitoring System (VMS) in AMMS changes:
    - Heated Intakes monitoring updated when IBF KIT is installed.
- Cockpit Display System (CDS) changes:
    - HTAWS upgrade to introduce:
        - Offshore mode as per CAA UK CAP 1519 - Proposed HTAWS Standard for Offshore operations;
        - SAR Mode as per customer's feedback.

For helicopters already equipped with Avionic Flight Software Phase 3.0, Phase 4.0 or Phase 5.0, the new software release Phase 6.0 will affect only changes to the following components:

- AMMS application software (includes VMS and FMS)
- CDS application software
- AFCS application software
- SSEPMS (Solid State System)

For helicopters equipped with Software Phase 3.0 and FIPS Kit P/N 8G3000F00111 (Extended Range cabin) or FIPS kit P/N 8G3000F00311 (Standard Cabin), in addition to the previously listed software changes, new cable assemblies are required to activate the Modification of ECDU Ice Protection Page.

F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives.

If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on

the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

G. MANPOWER

To comply with this Service Bulletin the following Maintenance-Man-Hours (MMH) are deemed necessary:

- seventy (70) MMH for all helicopters equipped with FIPS kit and Avionic Flight Software Release Phase 3.0.
- sixteen (16) MMH for helicopters equipped with DTD P/N 4F4620V00551 except those equipped with FIPS kit and Avionic Flight Software Release Phase 3.0.
- eight (8) MMH for all other helicopters.

Maintenance-Man-Hours are based on hands-on time and can change with personnel and facilities available.

H. WEIGHT AND BALANCE

N.A.

I. REFERENCES

1) PUBLICATIONS

- AW189 Software handbook P/N 189G0000X007

DATA MODULE		DESCRIPTION	PART
DM01	89-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	-
DM02	89-A-06-41-00-00A-010A-A	Access doors and panels - General data	-
DM03	89-A-22-11-08-00A-752A-A	Flight control computer – Data loading.	-
DM04	89-A-24-81-00-00A-752A-A	SSEPMS - Remote electric power units (REPUs) - Data loading	-
DM05	89-A-24-81-00-00B-752A-A	SSEPMS - Electrical control display units (ECDUs) - Data loading	-
DM06	89-A-34-61-00-00A-752A-A	Digital map system kit - Navigation maps - Data loading	-
DM07	89-A-46-21-00-00A-750A-A	Aircraft mission management system - Load software procedure	-
DM08	89-A-46-21-00-00A-752A-A	Aircraft mission management system - Data loading	-

DATA MODULE		DESCRIPTION	PART
DM09	89-A-46-21-05-00A-750A-A	Data transfer device (DTD) - Load software procedure	-
DM10	89-A-46-21-05-00A-752A-A	Data transfer device (DTD) - Data loading	-
DM11	89-A-46-31-00-00A-750A-A	Cockpit display system - Load software procedure	-
DM12	89-A-46-21-05-00A-520A-A	Data transfer device (DTD) - Remove procedure	-
DM13	89-A-46-21-05-00A-720A-A	Data transfer device (DTD) - Install procedure	-
DM14	89-A-46-32-03-00A-750A-B	Cabin PC - Load software procedure	-
DM15	89-B-46-22-06-00A-750A-A	Cabin PC - Load software procedure	-
DM16	89-A-34-22-03-00A-75BA-A	AHRU1 calibrated PROM - Setup procedure	-
DM17	89-A-34-22-07-00A-75BA-A	AHRU2 calibrated PROM - Setup procedure	-
DM18	89-B-34-44-05-00A-752A-A	External compensation unit - Data loading	-

2) ACRONYMS

AFCS	Aircraft Flight Control System
AFDX	Avionic Full Duplex Ethernet
AHRU	Attitude Heading and Reference Unit
AMMC	Aircraft Mission Management Computer
AMMS	Aircraft & Mission Management System
AMP	Aircraft Maintenance Publication
CDS	Cockpit Display System
CRC	Cyclic Redundancy Check
DCL	Deceleration Mode
DMAP	Digital Map
DM	Data Module
DMG	Digital Map Generator
DMGSW	Digital Map Generator Software
DOA	Design Organization Approval
DTD	Data Transfer Device
ECDU	Electrical Control and Display Unit
EECU	Electronic Engine Control Unit
FCD	Flight Crew Data
FIPS	Full Ice Protection System

FMS	Flight Management System
GA	Go-Around
GSPD	Ground Speed Mode
HUMS	Health and Usage Monitoring System
HTAWS	Helicopter Terrain Awareness and Warning System
ICS	Intercommunication system.
IPD	Illustrated Part Data
IPS	Ice Protection System
LHD	Leonardo Helicopter
LIPS	Limited Ice Protection System
MCDU	Multifunction Control Display Unit
MMH	Maintenance Man Hour
NGS	Autonomous Glideslope Mode
NGSPD	Autonomous Ground Speed Mode
NLOC	Autonomous Localizer Mode
OPSW	Operational Software
OSD	Operational Suitability Data
P/N	Part Number
REPU	Remote Electrical Power Unit
RFM	Rotorcraft Flight Manual
SAR	Search and Rescue
SB	Service Bulletin
STBY	Stand-By
SW	Software
SSEPMS	Solid State Electrical Power Management System
TCAS	Traffic Alert and Collision Avoidance System
TU-WLVL	Lateral Ground Speed Control or Wings Level Control in Transition Up mode.
VMS	Vehicle Monitoring System
VNE	Never Exceed Speed
XPDR	Transponder

3) ANNEX

N.A.

J. PUBLICATIONS AFFECTED

AW189 Rotorcraft Flight Manual (RFM)

AW189 Operation Suitability Data – Flight Crew Data (OSD-FCD)

AW189 Illustrated Part Data (IPD)

K. SOFTWARE ACCOMPLISHMENT SUMMARY

Software to be updated:

- DMG SW P/N 4F4620VM0201
- AMMC operational software 6.1.5 P/N 8G4620AA0600
- DTD software P/N 8G4620VS0200
- CDS operational software P/N 8G4630AS0600
- AFDX configuration switch P/N 8G4640AO0005
- ECDU Configuration File P/N 8G462AC07XX
- Option file for AMMC P/N 8G4620AO10XX
- Option file for CDS P/N 8G4630AO10XX
- REPU Configuration File P/N 8G2460AS0500
- DMAP P/N TA00AWHL-XXXXXXXXX
- AMMC VAM SW Rel. 2.2 P/N 8G4620AB0106
- AFCS operational software P/N 8G2210AS0600
- Cabin PC application software release 1.6.3 P/N 8G4620FS0106

Part numbers of Option files, ECDU configuration files and digital maps are depending upon helicopter configuration that can be different from the one reported in relevant helicopter “Commessa di Vendita”. Customer must contact AW189 Product Support Engineering (PSE_AW189.MBX.AW@leonardocompany.com) to request the correct files at least three months in advance from the scheduled embodiment of this Service Bulletin. In order to define the correct files to be installed on the helicopter, the following table has to be compiled by the customer with configuration file P/N.

SW DESCRIPTION	S/N HELICOPTER P/N SW INSTALLED (COMPILED BY CUSTOMER)	 P/N SW TO BE ORDERED (COMPILED BY LEONARDO COMPANY)
AFCS OPERATIONAL SW		
AFDX CONFIG SWITCH		
AMMC DMG SW (if installed)		
AMMC OPSW		
AMMC OPTION FILE		
AMMC VAM SW		
CDS OPTION FILE		
ECDU CONFIGURATION FILE		
DIMMER CONFIG FILE		
ECDU OP SW		
REPU CONFIG TABLE		
ICS SETTING FILE		
DMAP SOFTWARE		
DTD SOFTWARE		

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**8G4600A00117**		**SOFTWARE INSTALLATION PHASE 6.0**	**REF**	**.**		**-**
2	**8G4640A00117**		**AVIONICS FLIGHT SOFTWARE INSTALLATION**	**REF**	**..**		**-**
3	4F4620VM0201		DMGSW	1	...	(1)(8)	-
4	8G2210AS0600		AFCS operational software	1	…	(1)	-
5	8G3450AO0001	8G3450AO0002	TSS configuration file	1	…	(1)(9)	-
6	8G4620AA0600		AMMC operational software 6.1.5	1	...	(1)	-
7	8G4620AB0106		AMMC VAM SW Rel. 2.2	1	…	(1)(10)	-
8	8G4620VS0200		DTD software	1	…	(1)(8)	-
9	8G4630AS0600		CDS operational software	1	…	(1)	-
10	8G4640AO0005		AFDX configuration switch	1	…	(1)	-
11	8G4620AO10XX		Option File for AMMC	1	..	(1)(12)	-
12	8G4630AO10XX		Option File for CDS	1	..	(1)(12)	-
13	TA00AWHL-XXXXXXXXX	DMG6845XXXXXXXXXXX	Digital Map	1	.	(8)	-
14	**8G4600A00317**		**SSEPMS SOFTWARE INSTALLATON**	**REF**	**..**		**-**
15	8G4620AC07XX		ECDU Configuration file	1	…	(1)(2)	-
16	8G2460AS0500		REPU configuration file	1	…	(1)(3)	-
17	**8G1130A00711**		**SOFTWARE INSTALLATION PHASE 6.0 PLACARD**		**..**		**-**
18	AW002DBHS078E11D		Placard	1	…		-
19	8G1130L00552		VNE placard	1	.	(15)	-
20	8G1130L00453		VNE placard	1	.	(16)	-
21	**8G2420A01511**		**IPS GEN CURRENT INSTL STD-CABIN**	**REF**	**.**		**-**
22	8G9A21B35401	8G9A21B35401A1R	IPS GEN MONITORING C/A (A1B354)	1	..		189-149L2
23	8G9B21B43201	8G9B21B43201A1R	IPS GEN MONITORING C/A (B1B432)	1	..		189-149L2
24	**8G2420A01611**		**IPS GEN CURRENT INSTL U/B**	**REF**	**.**		**-**
25	8G9A21B35401	8G9A21B35401A1R	IPS GEN MONITORING C/A (A1B354)	1	..		189-149L3
26	8G9B21B43202		IPS GEN MONITORING C/A (B1B432)	1	..		189-149L3
27	8G4620FS0106		Cabin PC application software release 1.6.3	1	.	(1)(11)	-
28	**8G4600P00611**		**WOW DTD RETROMOD**	**REF**	**.**		
29	A523A-A02		Contact	4	..		189-103L2
30	M81824/1-1		Splice	2	..		189-103L2

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
31	A556A-T22		Wire	4 m	.		189-103L2
32	A579A02-002		Marker sleeve	4	.		189-103L2
33	8G4620V00451		Data transfer device	1	.		189-103L2
34	**8G3110P00811**		**VNE PLACARD RETROMOD**	**REF**	**.**		
35	8G3110A05051		Plate	1	..		189-240L1
36	8G3110A05151		Washer	1	..		189-240L1
37	A407A08C1P		Anchor Nut	4	..		189-240L1
38	MS35206-230		Screw	2	..		189-240L1
39	MS35214-29		Screw	2	..		189-240L1
40	NAS1149CN816R		Washer	2	..		189-240L1

2) CONSUMABLES

N.A.

3) LOGISTIC MATRIX

In order to apply this Service Bulletin, the following Logistic P/N can be ordered in accordance with the applicable notes:

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
AW002DBHS078E11D	1	(4)	-
189-149L2	1	(6)	-
189-149L3	1	(7)	-
4F4620VM0201	1	(1)(8)	
8G2210AS0600	1	(1)(4)	-
8G3450AO0001	1	(1)(9)	-
8G3450AO0002	1	(1)(9)	-
8G4620AB0106	1	(1)(10)	-
8G4620AA0600	1	(1)(4)	-
8G4620VS0200	1	(1)(8)	-
8G4630AS0600	1	(1)(4)	-
8G4640AO0005	1	(1)(4)	-
8G2460AS0500	1	(1)(3)	-
8G4620FS0106	1	(1)(11)	-
8G4620AC07XX	1	(1)(2)(5)	-
8G4620AO10XX	1	(1)(5)(12)	-
8G4630AO10XX	1	(1)(5)(12)	-
189-103L2	1	(13)	-
TA00AWHL-XXXXXXXXX	1	(5)(8)(14)	-
8G1130L00552	1	(15)	-
8G1130L00453	1	(16)	-
189-240L1	1	(15)	

NOTE

(1) This software will not be supplied; it will be available, along with relevant certification document, in “My Software” sub-section of Leonardo AW Customer Portal website https://leonardo.agustawestland.com.

(2) The new ECDU configuration file is required for helicopters equipped with Software Phase 3.0 and FIPS kit P/N 8G3000F00111 (Extended Range cabin) or FIPS kit P/N 8G3000F00311 (Standard Cabin) or LIPS kit P/N 8G3000F00211 or 8G3000F00212 or Ice Detector Installation kit P/N 8G3080F00111.

(3) The new REPU configuration table is required only for helicopters equipped with Software Phase 3.0 and FIPS kit P/N 8G3000F00111 (Extended Range cabin) or FIPS kit P/N 8G3000F00311 (Standard Cabin) or LIPS kit P/N 8G3000F00211 or 8G3000F00212 or Ice Detector Installation kit P/N 8G3080F00111.

(4) Applicable to all AW189 helicopters.

(5) Refer to Software Accomplishment Summary section.

(6) Applicable only to Standard Cabin helicopters (S/N 49xxx) equipped with FIPS kit P/N 8G3000F00311 and Avionic Flight Software Release Phase 3.0. Same Logistic P/N of SB189-149 Avionic Flight Software Phase 4.0.

(7) Applicable only to Extended Range helicopters (S/N 89xxx or S/N 92xxx) equipped with FIPS kit P/N 8G3000F00111 and Avionic Flight Software Release Phase 3.0. Same Logistic P/N of SB189-149 Avionic Flight Software Phase 4.0.

(8) Applicable only to helicopters equipped with Avionic Flight Software Phase 3.0 or Phase 4.0.

(9) Applicable only to helicopters equipped with TSS-4100 P/N 822-2132-001. Not applicable to helicopters equipped with TCAS II kit P/N 8G3450F00411 or P/N 8G3450F00111. P/N 8G3450AO0002 is alternative to P/N 8G3450AO0001 and it is required only for helicopters equipped with “15000 feet service ceiling kit“ P/N 8G0000F00511.

(10) Applicable only to helicopters AW189 from S/N 49007 to S/N 49023, from S/N 49025 to S/N 49039, from S/N 49042 to S/N 49053, from S/N 49055 to S/N 49060, from S/N 89001 to S/N 89004, from S/N 89007 to S/N 89012, from S/N 92001 to S/N 92010 and not already compliant with SB189-227.

(11) Applicable only to helicopters equipped with “mission console system kit” P/N 8G4620F00211 or P/N 8G4620F00411 and Software Phase 3.0 or 4.0.

(12) Applicable only to helicopters equipped with Software Phase 3.0 or Phase 4.0 that will install the OIL RIG APPROACH functionality.

(13) Applicable only to helicopters equipped with DTD P/N 4F4620V00551.

(14) P/N DMG6845XXXXXXXXXX can be supplied as valid alternative.

(15) Applicable to all helicopters not equipped with FIPS kit P/N 8G3000F00111 (Extended Range cabin) or FIPS kit P/N 8G3000F00311 (Standard Cabin) or LIPS kit P/N 8G3000F00211 or 8G3000F00212 and “15000 feet service ceiling kit” P/N 8G0000F00511.

(16) Applicable to all helicopters equipped with FIPS kit P/N 8G3000F00111 (Extended Range cabin) or FIPS kit P/N 8G3000F00311 (Standard Cabin) or LIPS kit P/N 8G3000F00211 or 8G3000F00212 and not equipped with “15000 feet service ceiling kit” P/N 8G0000F00511.

B. SPECIAL TOOLS

Refer to ITEP for the special tools required to comply with the AMP DM referenced in the accomplishment instructions.

C. INDUSTRY SUPPORT INFORMATION

Product Enhancement

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.

1. In accordance with AMP DM 89-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.

NOTE

Perform the following step 2 only if the helicopter is equipped with Avionic Flight Software Release Phase 3.0 and kit FIPS P/N 8G3000F00111 or P/N 8G3000F00311.

2. Perform the IPS GEN CURRENT INSTL (std-cabin) P/N 8G2420A01511 or IPS GEN CURRENT INSTL U/B (Extended Range Cabin) P/N 8G2420A01611 as described in the following procedure:

   2.1 With reference to Figures 1 to 3 route the following cables following the existing routes unless otherwise indicated on the figures:

   - 8G9A21B35401 IPS GEN MONITORING C/A (A1B354)
   - 8G9B21B43201 IPS GEN MONITORING C/A (B1B432) (only std-cabin helicopters).
   - 8G9B21B43202 IPS GEN MONITORING C/A (B1B432) (only Extended Range helicopters).

   2.2 With reference to Figure 4 wiring diagram, perform electrical connection of the cable assy A1B354 to connector A2P4 and to connector P114.

   2.3 With reference to Figure 4 wiring diagram, perform electrical connection of the cable assy B2B432 to connector J114 and to connector A333P1.

NOTE

Make sure that on the Computer you have the following file:

- Aircraft Flight Control System (AFCS) software;
- Aircraft Mission Management Computer (AMMC) software;
- CDS Operational Software;
- AMMC option file (if required)
- CDS option file (if required)
- DMG Software;
- DTD Software;
- AFDX Configuration switch;
- Helo Perf Database;
- ECDU Configuration File;
- Navigation (Jeppesen) database

3. Download all the HUMS data from AMMC to DTD.
4. Upload the HUMS data to Heliwise.
5. Require to change the Heliwise software alignment to the HUMS Support Group opening a Technical Query via Heliwise Query Management function.
6. Check the P/N of the installed DTD. If the DTD is P/N 4F4620V00551, perform the following procedure to replace the existing DTD with the new one. Otherwise go to Step 7.

   6.1 In accordance with AMP DM 89-A-46-21-05-00A-520A-A, remove existing DTD P/N 4F4620V00551 from the helicopter.

   6.2 With reference to Figure 7 wiring diagram, perform the DTD upgrade retromod P/N 8G4600P00611 as described in the following procedure:

      6.2.1 From the TB1014, disconnect the pin 1A and the pin 2A; connect together the wire 4600-101-22G and 4600-300-22G by means of n°1 splice P/N M81824/1-1. Mark the splice as SP4600-001.

      6.2.2 Cut a piece of wire P/N A556A-T22 at adequate length between TB1014 and TB150-5, following existing cable routing; crimp on each wire end a contact P/N A523A-A02 and connect the pin 1A of TB1014 with pin J of TB150-5. Install n°2 marker sleeve A579A02-002, one near each TB, and mark the wire as 4600-005.

6.2.3 From the TB1015, disconnect the pin 1B and the pin 2B; connect together the wire 4600-294-22G and 4600-299-22G by means of n°1 splice P/N M81824/1-1. Mark the splice as SP4600-002.

6.2.4 Cut a piece of wire P/N A556A-T22 at adequate length between TB1015 and TB137-5, following existing cable routing; crimp on each wire end a contact P/N A523A-A02 and connect the pin 2B of TB1015 with pin H of TB137-5. Install n°2 marker sleeve A579A02-002, one near each TB, and mark the wire as 4600-006.

6.3 In accordance with AMP DM 89-A-46-21-05-00A-720A-A, install the new DTD P/N 8G4620V00451 to the helicopter.

6.4 In accordance with applicable steps of the AMP DM 89-A-46-21-05-00A-750A-A, perform the upload of the DTD SW P/N 8G4620VS0200.

7. In accordance with AMP DM 89-A-22-11-08-00A-752A-A, perform the upload of the Aircraft Flight Control System (AFCS) software P/N 8G2210AS0600 and verify the CRC is 0x52278146.

8. In accordance with applicable steps of the AMP DM 89-A-46-21-00-00A-750A-A, perform the upload of the following software:

8.1 Install Aircraft Mission Management Computer (AMMC) OPWS 6.1.5 software P/N 8G4620AA0600. Verify that the CRC is 0x67839790 for AMMC software. Verify that helicopter tail number on MCDU and helicopter serial number on DTD are correct.

8.2 If helicopter is equipped with Software Phase 3.0 or 4.0 and it is equipped with OIL RIG APPROACH functionality, install relevant AMMC option file.

8.3 If helicopter is equipped with Software Phase 3.0 or 4.0, install DMGSW P/N 4F4620VM0201. Verify that the CRC is 0x2F4AF052.

8.4 Load the AMMC VAM SW REL. P/N 8G4620AB0106. Verify that the CRC is 0x8B49BEB7.

9. In accordance with applicable steps of the AMP DM 89-A-46-31-00-00A-750A-A, perform the upload of the following software:

9.1 Install CDS Operational Software P/N 8G4630AS0600. Verify that the CRC is 9819 for CDS software.

9.2 If helicopter is equipped with Software Phase 3.0 or 4.0 and it is equipped with OIL RIG APPROACH functionality, install relevant CDS option file.

9.3 Install AFDX Configuration switch P/N 8G4640AO0005.

10. In accordance with applicable steps of the AMP DM 89-A-46-21-00-00A-752A-A perform the upload of the HELO PERF database P/N HELO_PERF_022 available on Leonardo website: https:// leonardo.agustawestland.com. Verify that the CRC is 0x584C953F.

NOTE

Perform the following Steps 11 and 12 only if the helicopter is equipped with Software Phase 3.0 and FIPS kit P/N 8G3000F00111 or 8G3000F00311, LIPS kit P/N 8G3000F00211 or 8G3000F00212 or ice detector installation kit P/N 8G3080F00111.

11. In accordance with applicable steps of AMP DM 89-A-24-81-00-00B-752A-A perform the ECDU configuration file (PM) - Load procedure.
12. In accordance with applicable steps of AMP DM 89-A-24-81-00-00A-752A-A, perform the upload of the REPU Configuration Table.

CAUTION

To install the Navigation (Jeppesen) Database download from Leonardo website http://leonardo.agustawestland.com the updated version of the Navigation Database.

13. In accordance with Maintenance Publication DM 89-A-46-21-05-00A-752A-A, perform the upload of the Navigation Jeppesen database.

NOTE

Perform the following step only if the helicopter is equipped with Digital Map kit P/N 8G3460F00111.

14. In accordance with applicable steps of AMP DM 89-A-34-61-00-00A-752A-A, perform the upload of the applicable DMAP.

NOTE

Perform the following step only if the helicopter is equipped with mission console system kit P/N 8G4620F00211 or P/N 8G4620F00411.

15. In accordance with applicable steps of AMP DM 89-A-46-32-03-00A-750A-B or DM 89-B-46-22-06-00A-750A-A, perform the Cabin PC application software P/N 8G4620FS0106 installation.

NOTE

Perform the following step only if the helicopter is equipped with TSS-4100 P/N 822-2132-001. Not applicable to helicopters equipped with TCAS II kit P/N 8G3450F00411 or P/N 8G3450F00111.

16. In accordance with AMP DM 89-B-34-44-05-00A-752A-A, install TSS configuration file P/N 8G3450AO0001 or P/N 8G3450AO0002.
17. With reference to Figure 6, replace existing decal with decal P/N AW002DBHS078E11D “SOFTWARE PHASE 6.0 INSTALLED”.

NOTE

Perform the following steps 18 and 19 only if the helicopter is equipped with Software Phase 3.0 or 4.0.

18. In accordance with AMP DM 89-A-34-22-03-00A-75BA-A perform the setup procedure of AHRU1 calibration PROM.
19. In accordance with AMP DM 89-A-34-22-07-00A-75BA-A perform the setup procedure of AHRU2 calibration PROM.

NOTE

Perform the following step only if the helicopter is not equipped with FIPS kit P/N 8G3000F00111 or 8G3000F00311, LIPS kit P/N 8G3000F00211 or 8G3000F00212 and not equipped with 15000 feet service ceiling kit P/N 8G0000F00511.

20. With reference to Figure 8, gain access to the cockpit area and perform the VNE placard retromod P/N 8G3110P00811 as described in the following procedure:
    - 20.1 With reference to Figure 8 View A, remove the existing placard. Discard the existing hardware.
    - 20.2 With reference to Figure 8 View A, remove the cockpit logo P/N 8G1130A01331. Retain existing hardware for later reuse.
    - 20.3 With reference to Figure 8 View A, remove plate P/N 4F3110A07351. Discard the existing hardware.
    - 20.4 With reference to Figure 8 View B and section C-C, install n°4 nut plates P/N A407A08C1P by means of EA9309.3NA adhesive on the plate P/N 8G3110A05051.
    - 20.5 With reference to Figure 8 View A, install washer P/N 8G3110A05151 and plate P/N 8G3110A05051 by means of n°2 screws P/N MS35206-230 and n°2 washers P/N NAS1149CN816R.

20.6 With reference to Figure 8 View A, install VNE placard P/N 8G1130L00552 by means of n°2 screws P/N MS35214-29.

20.7 With reference to Figure 8 View A, re-install the cockpit logo P/N 8G1130A01331. Use existing hardware.

NOTE

Perform the following step only if the helicopter is equipped with FIPS kit P/N 8G3000F00111 or 8G3000F00311, LIPS kit P/N 8G3000F00211 or 8G3000F00212 and not equipped with 15000 feet service ceiling kit P/N 8G0000F00511.

21. With reference to Figure 8, gain access to the cockpit area and perform the following procedure:

21.1 With reference to Figure 8 View A, remove the existing placard. Retain existing hardware for later reuse.

21.2 With reference to Figure 8 View A, install the VNE placard P/N 8G1130L00453 by means of previously removed hardware.

NOTE

Following step 22 is applicable only to helicopters S/N 49056, 49058, 49059 and 49060.

22. With reference to Figure 9, perform the electrical change as described in the following procedure:

22.1 In accordance with AMP DM 89-A-06-41-00-00A-010A-A, remove access panels 165D, 168A and 169A to gain access to the REPU 3 and REPU 4 areas.

22.2 With reference to Figure 9, disconnect wire 2310-002 from REPU 3 connector Q3PA7 pin N and stow it properly.

22.3 With reference to Figure 9, connect wire 2310-001 to REPU 4 connector Q4PA7 pin J.

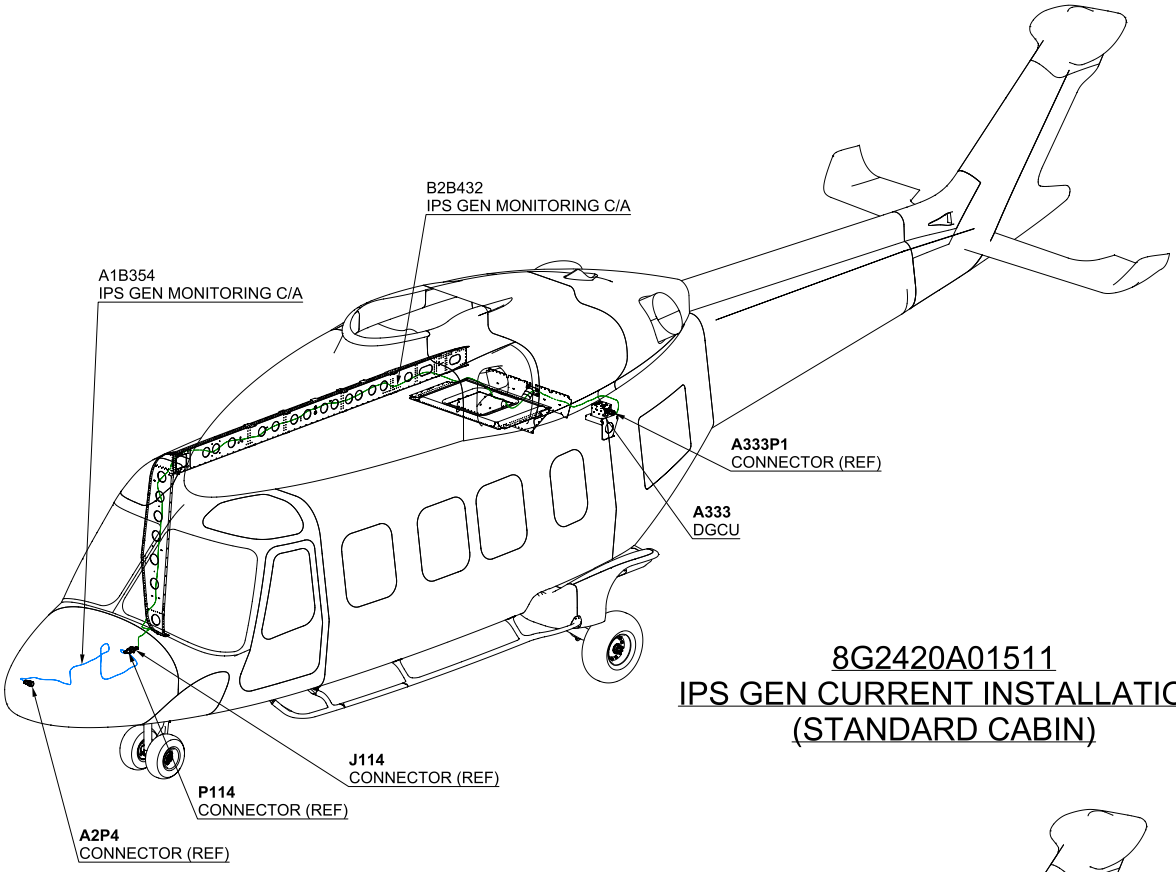
23. Remove all the tools and other items from the work area.

24. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.

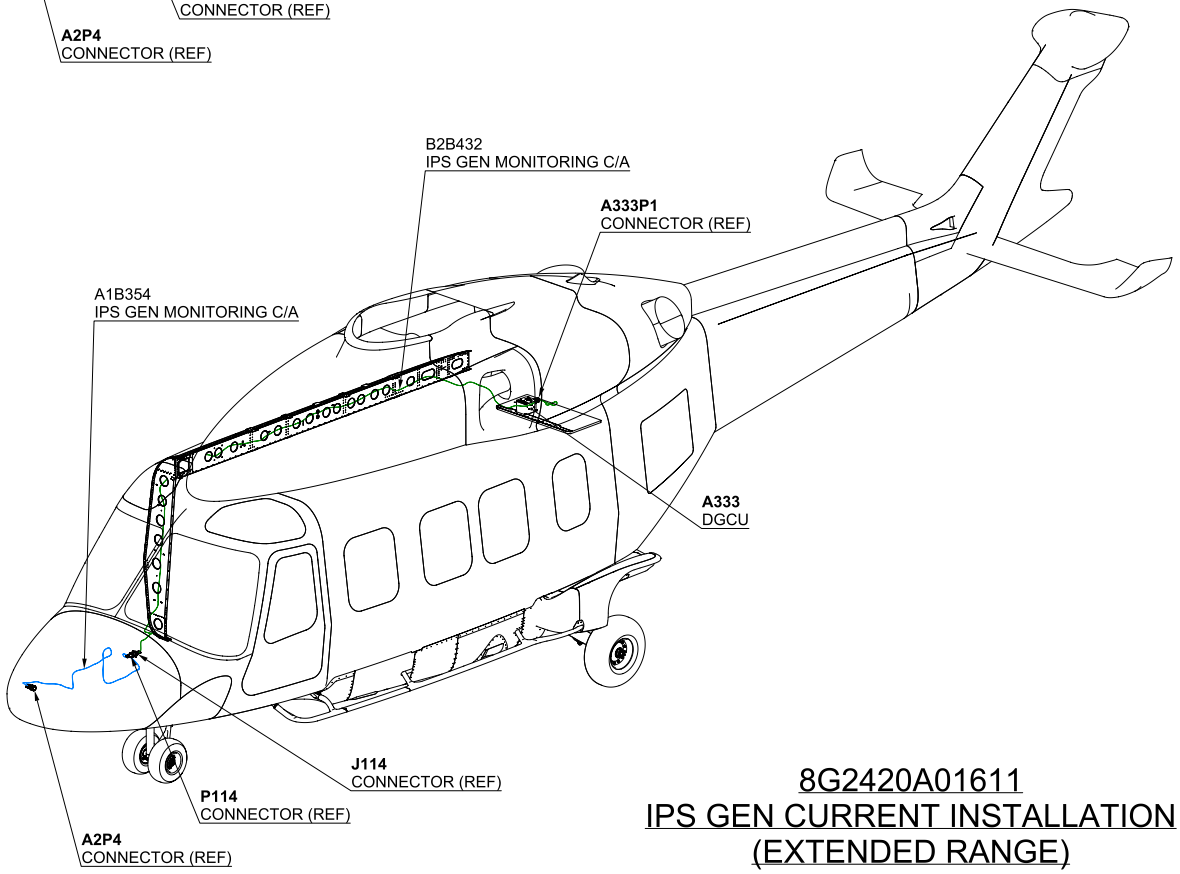
25. Send the attached compliance form to the following mail box:

engineering.support.lhd@leonardocompany.com

As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.



8G2420A01511
IPS GEN CURRENT INSTALLATION
(STANDARD CABIN)



8G2420A01611
IPS GEN CURRENT INSTALLATION
(EXTENDED RANGE)

Figure 1

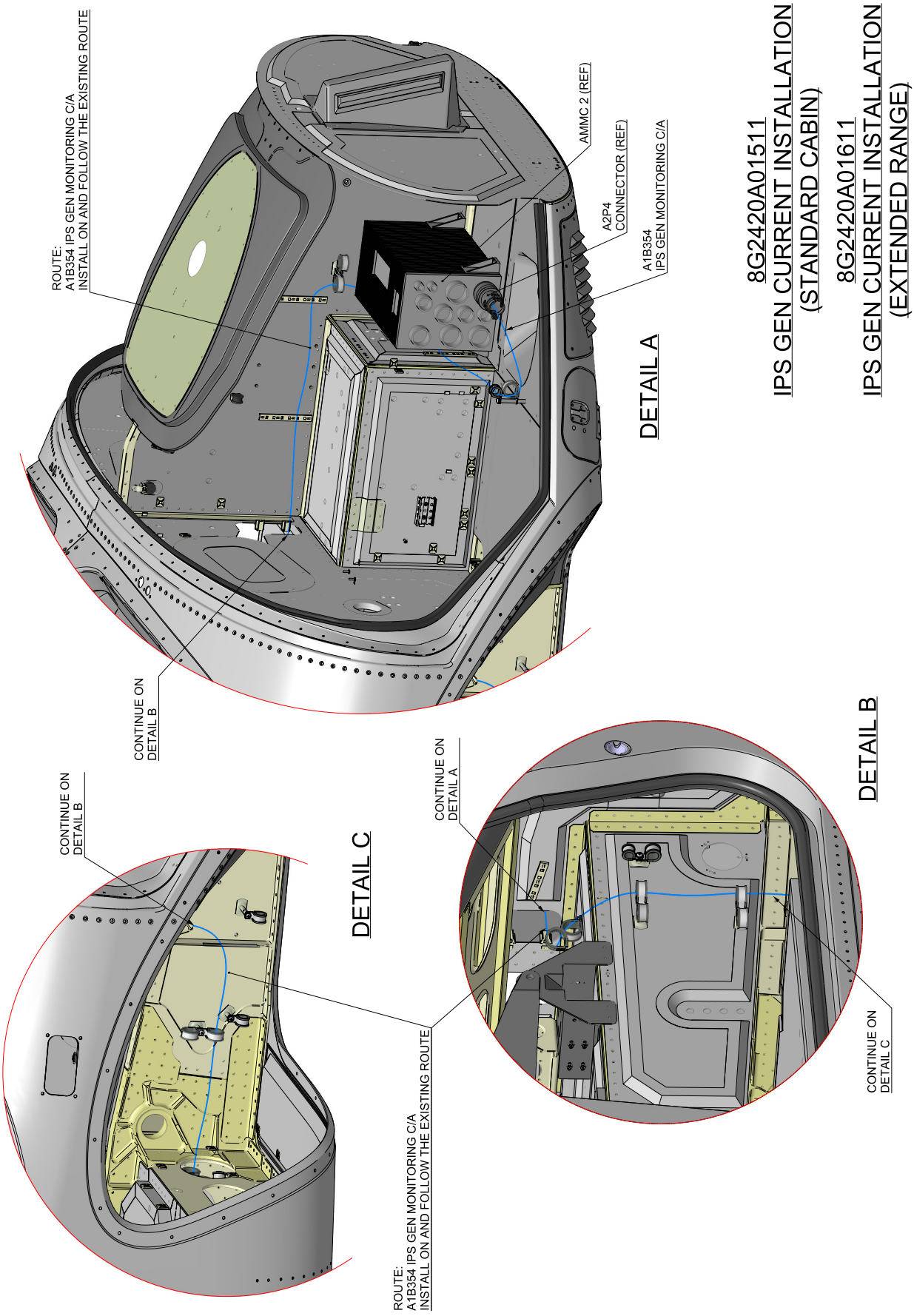

8G2420A01511
IPS GEN CURRENT INSTALLATION
(STANDARD CABIN)
8G2420A01611
IPS GEN CURRENT INSTALLATION
(EXTENDED RANGE)
DETAIL A
ROUTE:
A1B354 IPS GEN MONITORING C/A
INSTALL ON AND FOLLOW THE EXISTING ROUTE
AMMC 2 (REF)
A2P4
CONNECTOR (REF)
A1B354
IPS GEN MONITORING C/A
CONTINUE ON
DETAIL B
DETAIL B
CONTINUE ON
DETAIL A
CONTINUE ON
DETAIL C
DETAIL C
CONTINUE ON
DETAIL B
ROUTE:
A1B354 IPS GEN MONITORING C/A
INSTALL ON AND FOLLOW THE EXISTING ROUTE

Figure 2

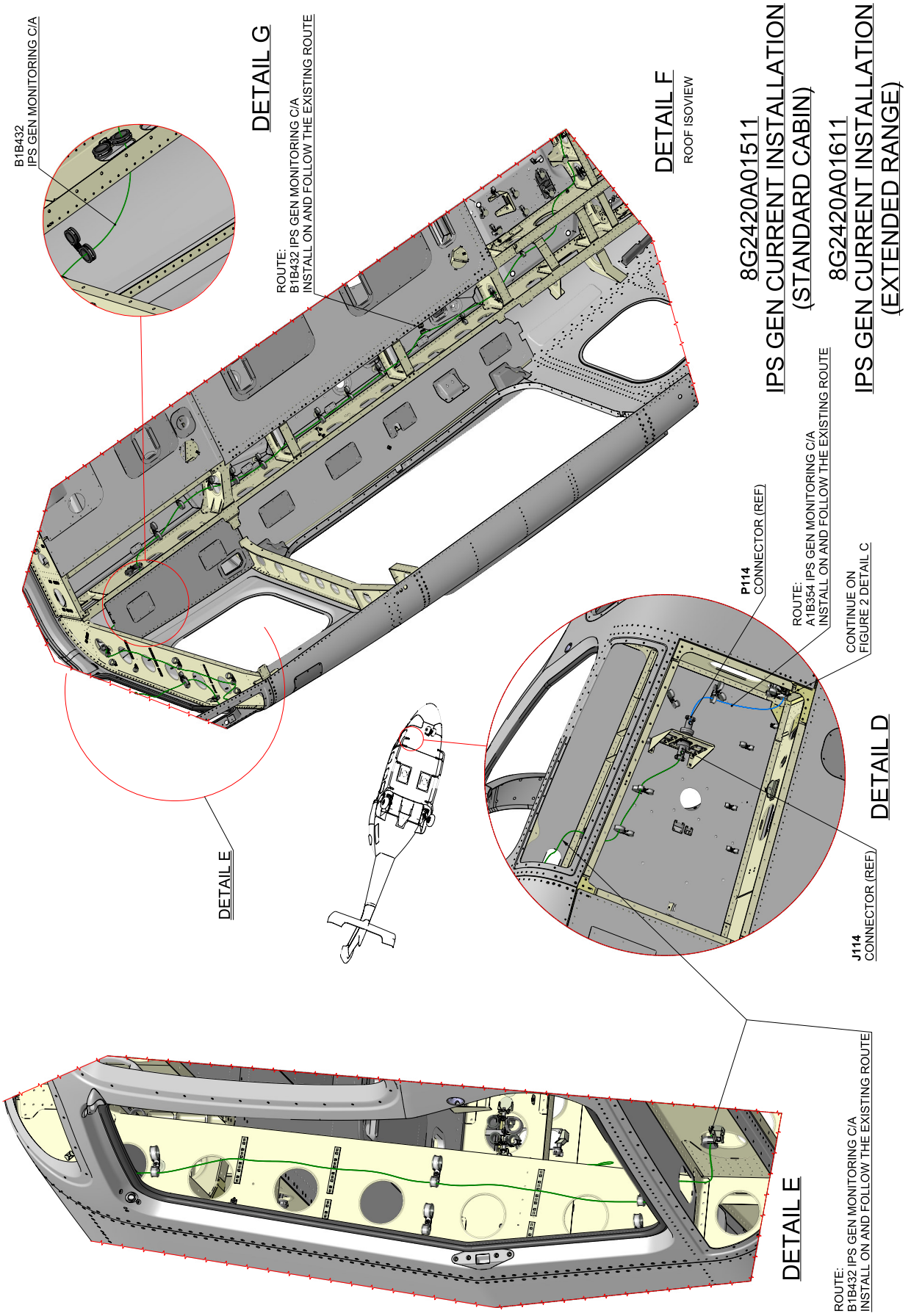

8G2420A01511
IPS GEN CURRENT INSTALLATION
(STANDARD CABIN)
8G2420A01611
IPS GEN CURRENT INSTALLATION
(EXTENDED RANGE)
DETAIL F
ROOF ISOVIEW
DETAIL G
B1B432
IPS GEN MONITORING C/A
ROUTE:
B1B432 IPS GEN MONITORING C/A
INSTALL ON AND FOLLOW THE EXISTING ROUTE
DETAIL E
P114
CONNECTOR (REF)
ROUTE:
A1B354 IPS GEN MONITORING C/A
INSTALL ON AND FOLLOW THE EXISTING ROUTE
CONTINUE ON
FIGURE 2 DETAIL C
DETAIL D
J114
CONNECTOR (REF)
DETAIL E
ROUTE:
B1B432 IPS GEN MONITORING C/A
INSTALL ON AND FOLLOW THE EXISTING ROUTE

Figure 3

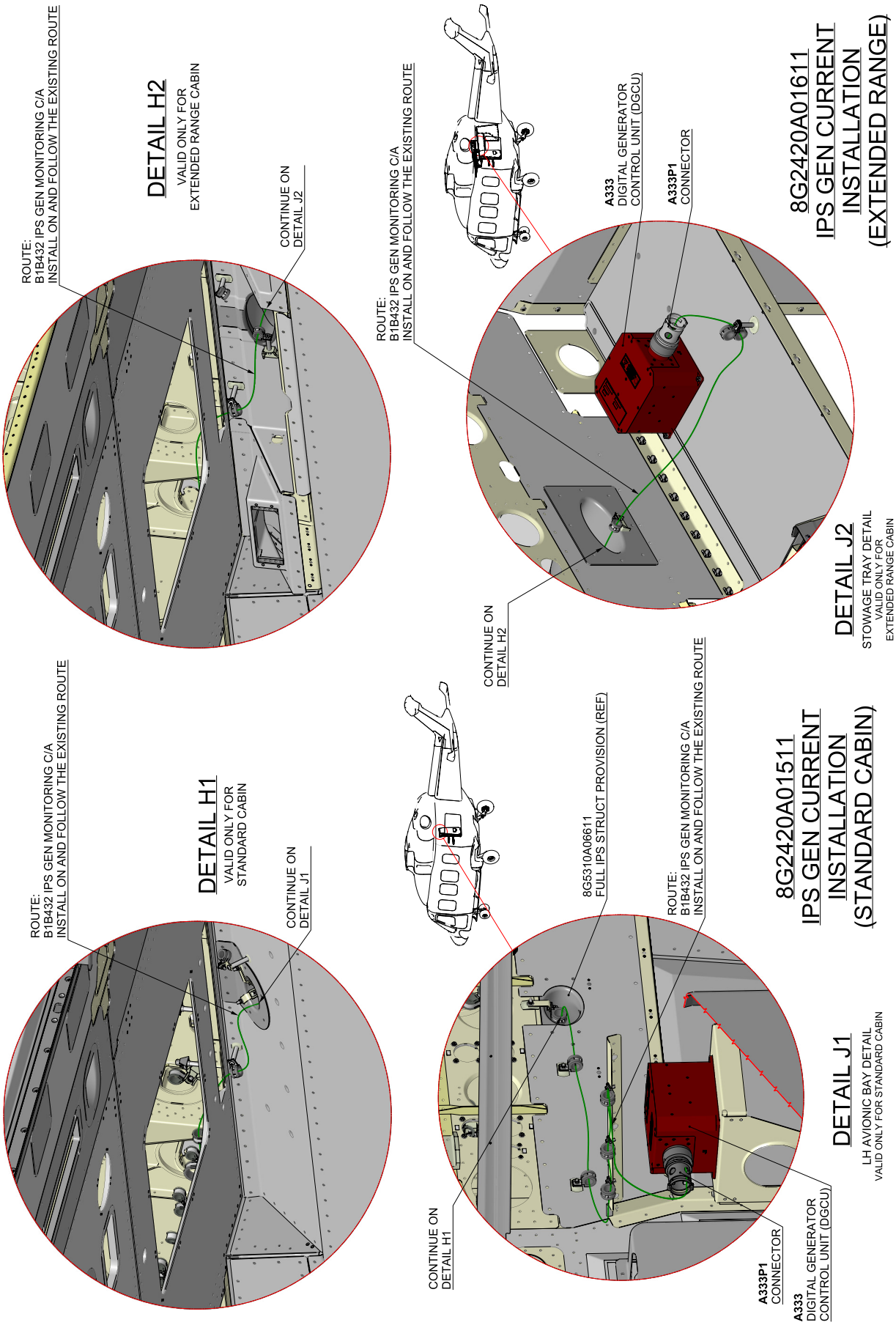

8G2420A01611
IPS GEN CURRENT
INSTALLATION
(EXTENDED RANGE)
DETAIL H2
VALID ONLY FOR
EXTENDED RANGE CABIN
ROUTE:
B1B432 IPS GEN MONITORING C/A
INSTALL ON AND FOLLOW THE EXISTING ROUTE
CONTINUE ON
DETAIL J2
A333
DIGITAL GENERATOR
CONTROL UNIT (DGCU)
A333P1
CONNECTOR
DETAIL J2
STOWAGE TRAY DETAIL
VALID ONLY FOR
EXTENDED RANGE CABIN
CONTINUE ON
DETAIL H2
8G2420A01511
IPS GEN CURRENT
INSTALLATION
(STANDARD CABIN)
DETAIL H1
VALID ONLY FOR
STANDARD CABIN
CONTINUE ON
DETAIL J1
8G5310A06611
FULL IPS STRUCT PROVISION (REF)
DETAIL J1
LH AVIONIC BAY DETAIL
VALID ONLY FOR STANDARD CABIN
CONTINUE ON
DETAIL H1

Figure 4

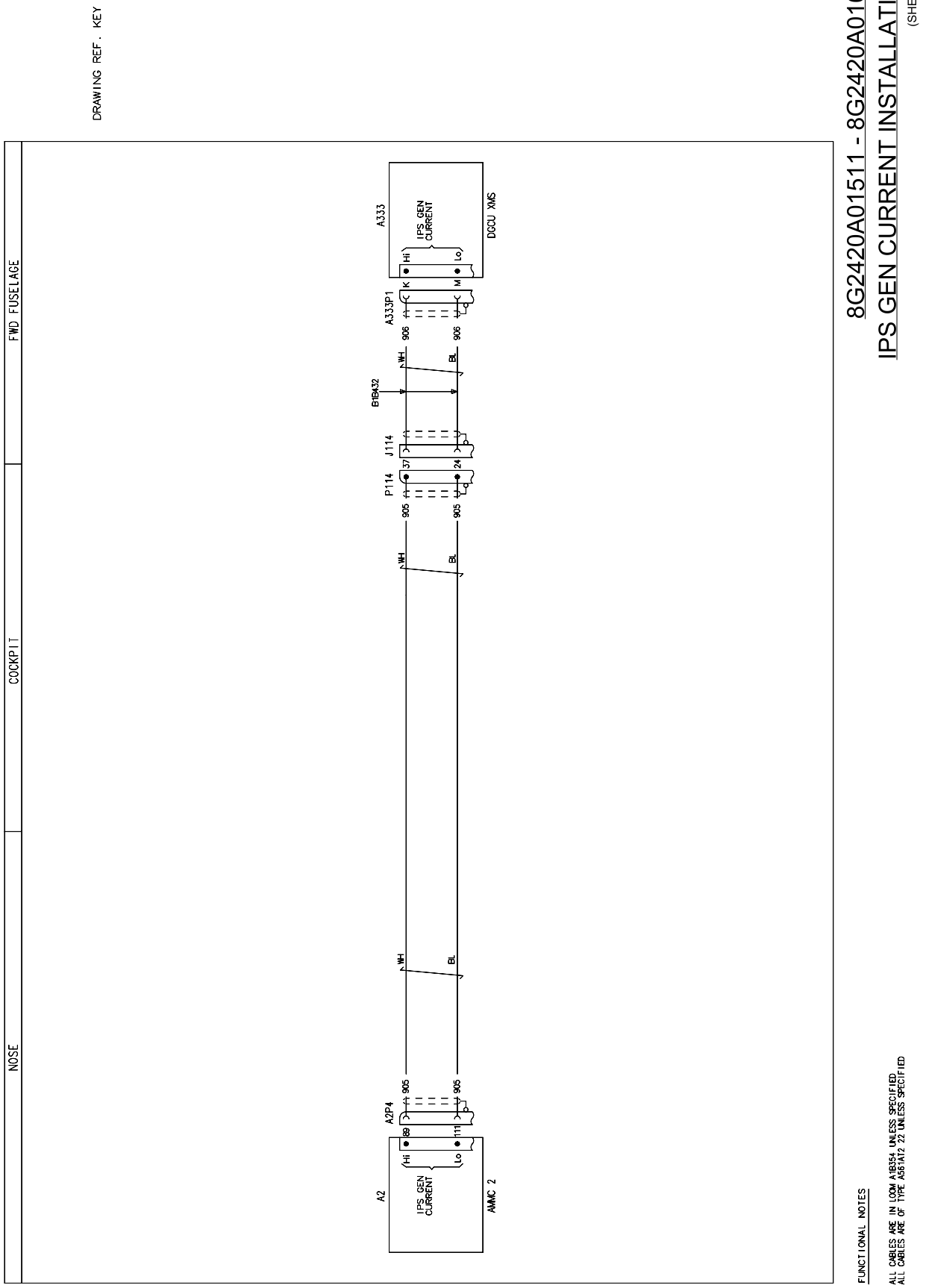

8G2420A01511 - 8G2420A01611
IPS GEN CURRENT INSTALLATION
(SHEET 1)
DRAWING REF. KEY
NOSE
COCKPIT
FWD FUSELAGE
A333
IPS GEN CURRENT
Hi
Lo
DGCU XMS
A333P1
K
M
906
906
WH
BL
B1B432
J114
37
24
P114
905
905
WH
BL
WH
BL
A2P4
905
905
89
111
Hi
Lo
IPS GEN CURRENT
A2
AMMC 2
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM A1B354 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE AS61A12 22 UNLESS SPECIFIED

Figure 5

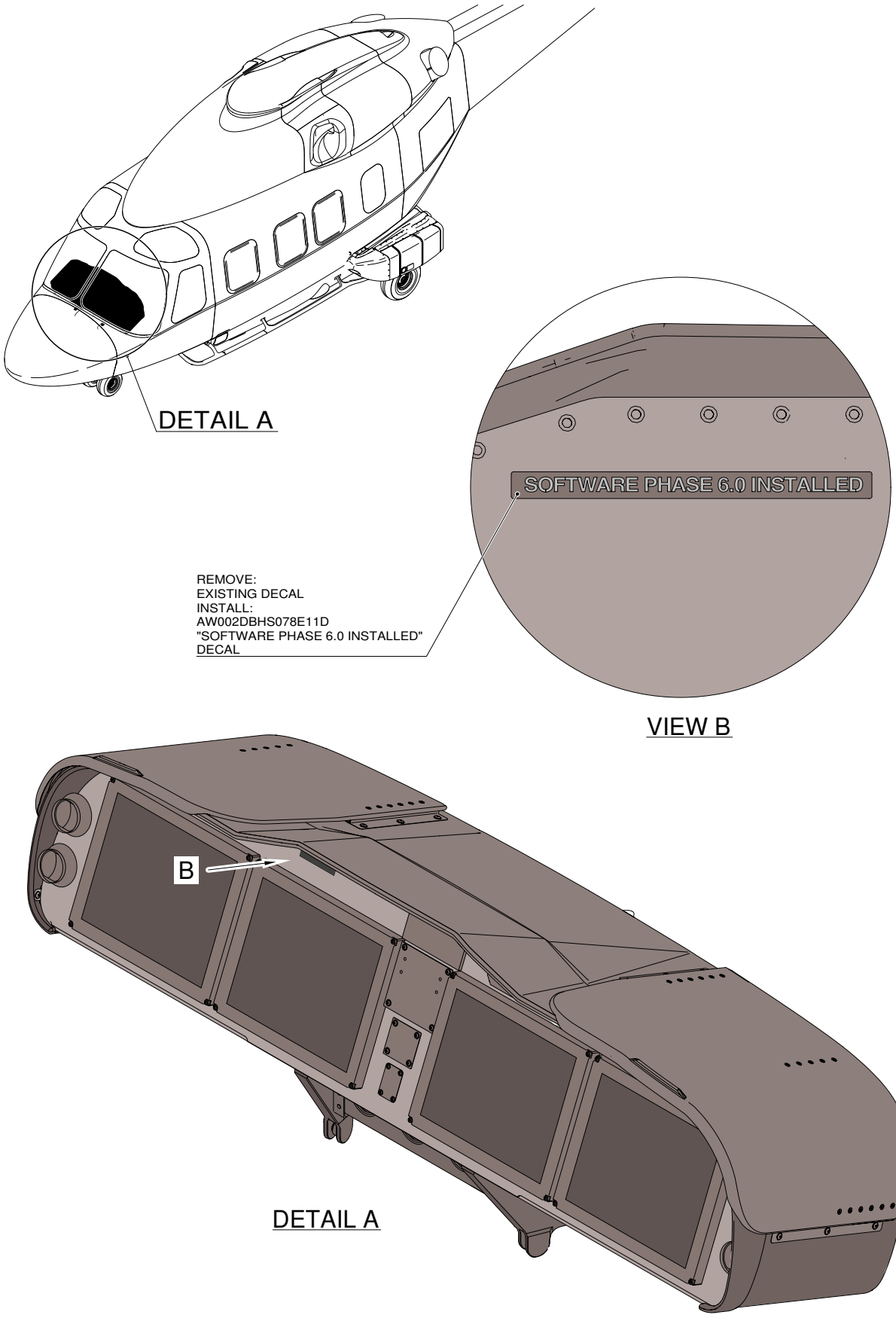

DETAIL A
SOFTWARE PHASE 6.0 INSTALLED
REMOVE:
EXISTING DECAL
INSTALL:
AW002DBHS078E11D
"SOFTWARE PHASE 6.0 INSTALLED"
DECAL
VIEW B
B
DETAIL A

Figure 6

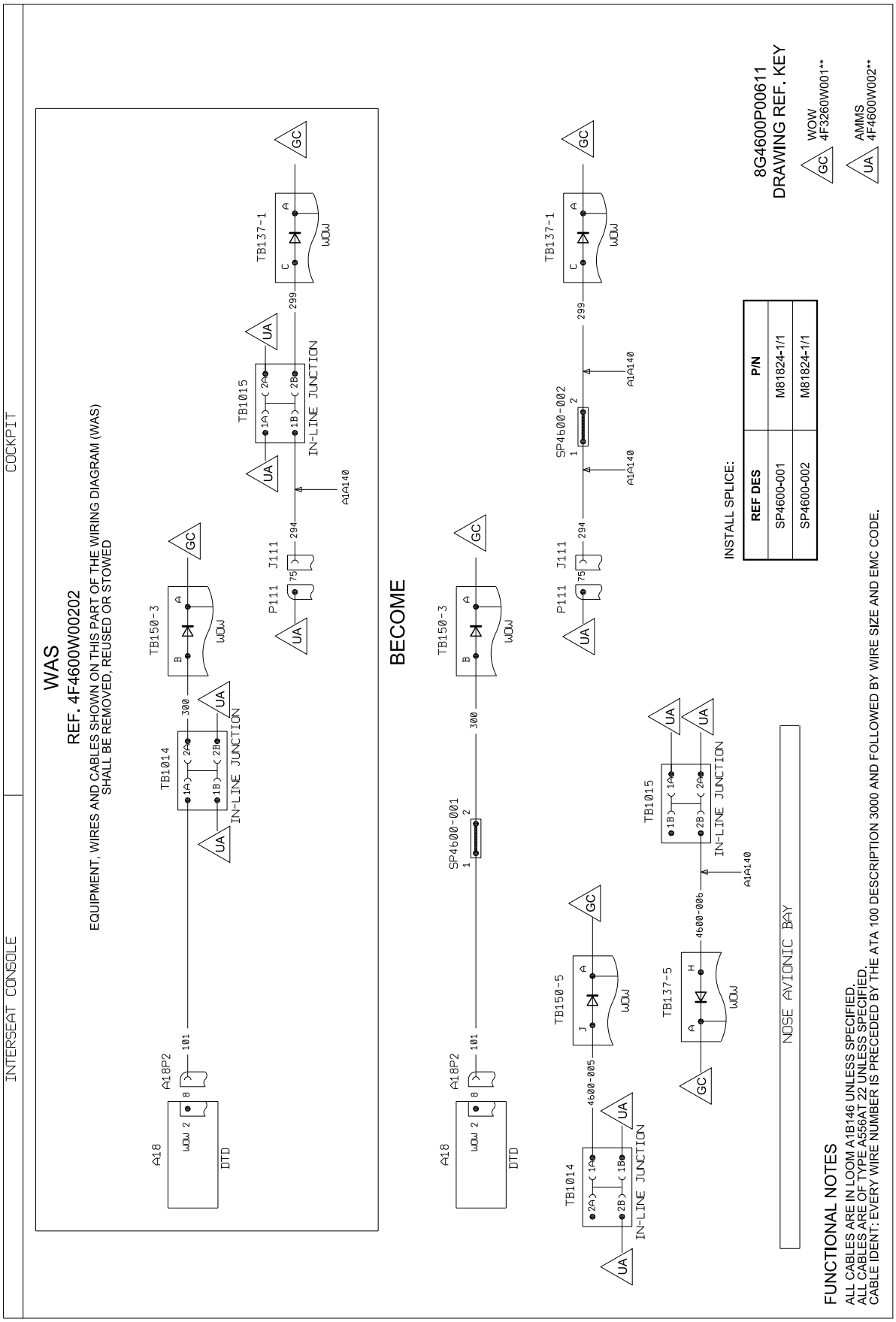

INTERSEAT CONSOLE
COCKPIT
WAS
REF. 4F4600W00202
EQUIPMENT, WIRES AND CABLES SHOWN ON THIS PART OF THE WIRING DIAGRAM (WAS) SHALL BE REMOVED, REUSED OR STOWED
BECOME
A18
A18P2
DTD
WOW
TB1014
IN-LINE JUNCTION
TB150-3
TB150-5
TB137-1
TB137-5
TB1015
SP4600-001
SP4600-002
P111
J111
GC
UA
A1A140
NOSE AVIONIC BAY
INSTALL SPLICE:
REF DES
P/N
SP4600-001
M81824-1/1
SP4600-002
M81824-1/1
8G4600P00611
DRAWING REF. KEY
WOW
4F3260W001**
AMMS
4F4600W002**
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM A1B146 UNLESS SPECIFIED.
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED.
CABLE IDENT: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 3000 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 7

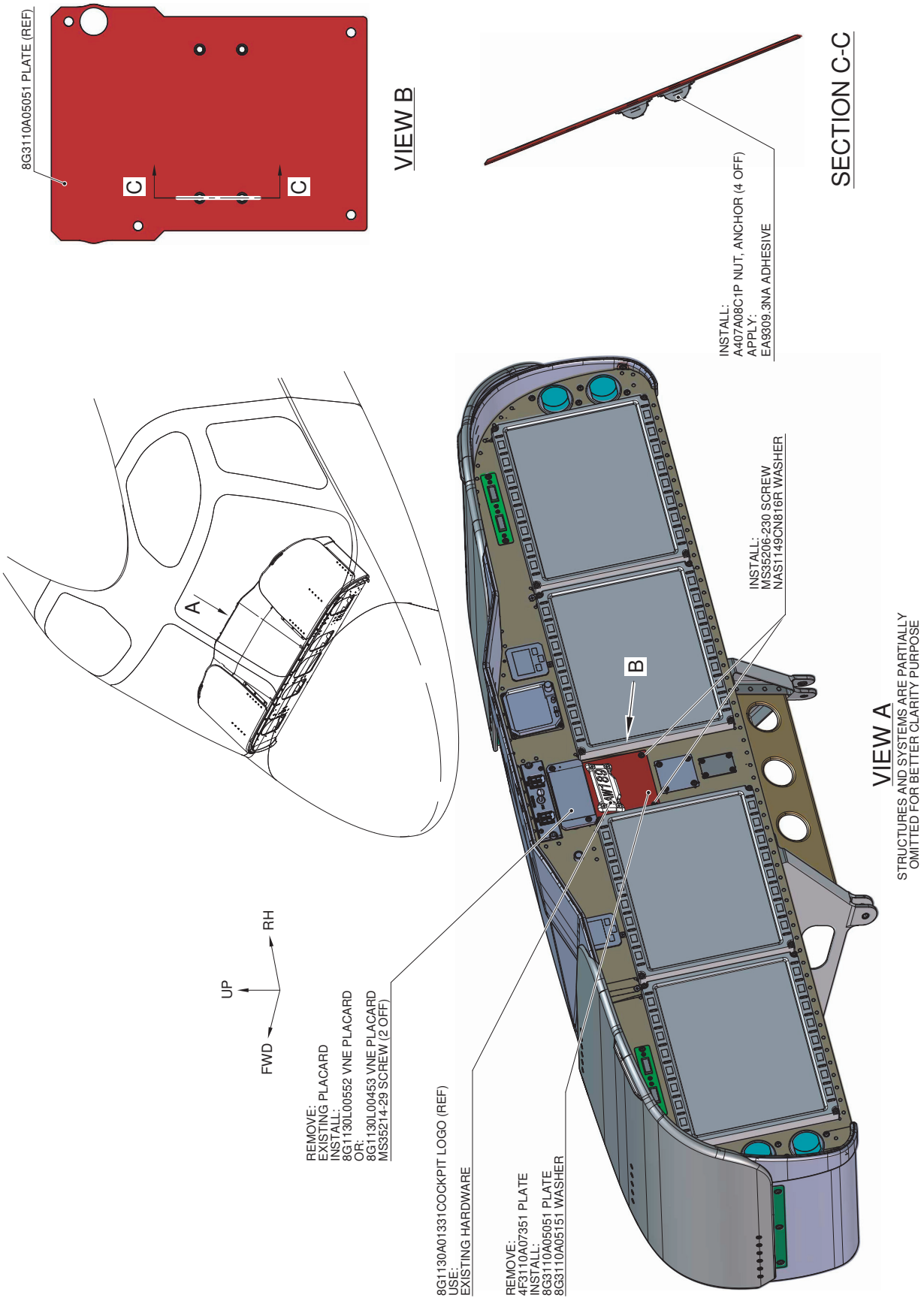

8G3110A05051 PLATE (REF)
C
C
VIEW B
SECTION C-C
INSTALL:
A407A08C1P NUT, ANCHOR (4 OFF)
APPLY:
EA9309.3NA ADHESIVE
A
B
INSTALL:
MS35206-230 SCREW
NAS1149CN816R WASHER
VIEW A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
UP
RH
FWD
REMOVE:
EXISTING PLACARD
INSTALL:
8G1130L00552 VNE PLACARD
OR:
8G1130L00453 VNE PLACARD
MS35214-29 SCREW (2 OFF)
8G1130A01331COCKPIT LOGO (REF)
USE:
EXISTING HARDWARE
REMOVE:
4F3110A07351 PLATE
INSTALL:
8G3110A05051 PLATE
8G3110A05151 WASHER

Figure 8

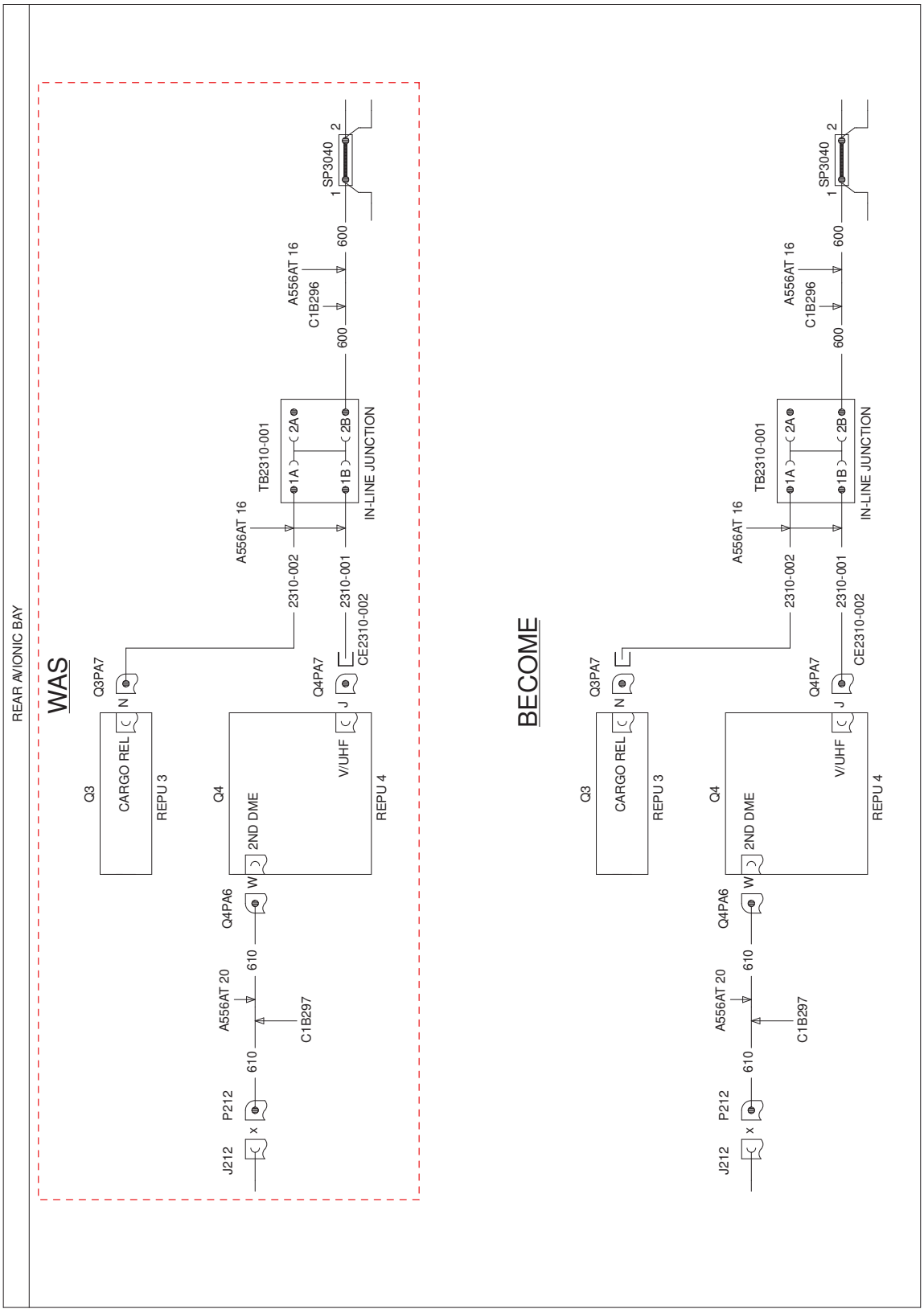

REAR AVIONIC BAY
WAS
Q3PA7
N
Q3
CARGO REL
REPU 3
Q4
2ND DME
Q4PA6
W
A556AT 20
610
C1B297
P212
610
J212
X
Q4PA7
J
V/UHF
REPU 4
A556AT 16
2310-002
TB2310-001
1A
2A
1B
2B
IN-LINE JUNCTION
2310-001
CE2310-002
A556AT 16
C1B296
600
600
SP3040
2
1
BECOME
Q3PA7
N
Q3
CARGO REL
REPU 3
Q4
2ND DME
Q4PA6
W
A556AT 20
610
C1B297
P212
610
J212
X
Q4PA7
J
V/UHF
REPU 4
A556AT 16
2310-002
TB2310-001
1A
2A
1B
2B
IN-LINE JUNCTION
2310-001
CE2310-002
A556AT 16
C1B296
600
600
SP3040
2
1

Figure 9

LEONARDO
HELICOPTERS

AgustaWestland Products

Please send to the following address: **LEONARDO S.p.A.** **CUSTOMER SUPPORT & SERVICES - ITALY** **PRODUCT SUPPORT ENGINEERING & LICENSES DEPT.** Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988	**SERVICE BULLETIN COMPLIANCE FORM**	Date:
	Number:	
	Revision:	

Customer Name and Address:	Telephone:
	Fax:
	B.T. Compliance Date:

Helicopter Model	S/N	Total Number	Total Hours	T.S.O.

Remarks:

Information:

We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.