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## SERVICE BULLETIN

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<b>Modification</b> <input checked="" type="checkbox"/>	<b>Recurring action</b> <input type="checkbox"/>	<b>One-off action</b> <input type="checkbox"/>
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**No.****292 73 2111**

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**ARRIEL 2 B1 - B1A - C1 - C2 - C2-CG**

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**Subject: Engine Electronic Control Unit (EECU). Modification of the Control System Software (CSS).****Application of modification TU 111C.**

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Date on which this SB becomes effective and must systematically be complied with, according to the conditions of application.

This is the date all resources (parts, tools, documentation, etc.) required for this procedure are available.

<b>Applicable from DECEMBER 2005</b>
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If resources (parts, tools, documentation, etc.) are available any earlier, the SB may be applied prior to the effectivity date.

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**Version: D****Reason for update:**

- Introduction of part numbers in the list of parts.
- Merger of SB No. 292 73 2111 and SB No. 292 73 2111M.

# SERVICE BULLETIN

## 1. Compliance

### A. Application

The manufacturer recommends this modification be applied as defined in this Service Bulletin (SB).

Validity	Code
ARRIEL 2 B1 - B1A	2-A-3
ARRIEL 2 C1 - C2	
ARRIEL 2 C2-CG	

#### Conditions of application for engines in service

- (1) **Application at the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**  
Upon customer request.
- (2) **Application at a Safran Helicopter Engines-approved Repair Center**  
Upon first return to an approved Repair Center, if the repair/overhaul being performed provides access to the CSS.

### B. Purpose

To prevent a random "watch dog" declaration during the self-tests.

### C. Description

This modification consists of modifying the equation programmed in the EECU EPLD.

### D. Approval

- ARRIEL 2 B1 - B1A - C1 - C2 variants:  
The technical content of this document is approved under the authority of the DOA (Design Organisation Approval) ref. EASA.21J.070.
- ARRIEL 2 C2-CG variant:  
The technical information given in this document is approved by Safran Helicopter Engines.

### E. Manpower

- (1) **At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**
  - (a) Personnel: 1 mechanic.
  - (b) Time required: 1 man/hour (removal/installation of the EECU for one engine).
- (2) **At a Safran Helicopter Engines-approved Repair Center**  
Refer to THALES repair reference documents (CMM, SB, etc.).

### F. Material

Refer to paragraph 3.

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### G. Tooling

- (1) **At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**  
Mechanic's standard tooling.
- (2) **At a Safran Helicopter Engines-approved Repair Center**  
Refer to THALES repair reference documents (CMM, SB, etc.).

### H. Weight and balance

Not applicable.

### I. References

- (1) ARRIEL 2 B1 Maintenance Manual..... Ref. X 292 N5 450 2.
- (2) ARRIEL 2 B1A Maintenance Manual ..... Ref. X 292 P4 450 2.
- (3) ARRIEL 2 C1 Maintenance Manual..... Ref. X 292 N4 450 2.
- (4) ARRIEL 2 C2 Maintenance Manual..... Ref. X 292 N6 450 2.
- (5) ARRIEL 2 C2-CG Maintenance Manual ..... Ref. X 292 P8 450 2.
- (6) ARRIEL 2 Overhaul Manual ..... Ref. X 292 R1 500 2.
- (7) Helicopter Maintenance Manual.
- (8) Helicopter Flight Manual.

### J. Other publications concerned

- (1) ARRIEL 2 B1 Spare Parts Catalog..... Ref. X 292 N5 700 2.
- (2) ARRIEL 2 B1A Spare Parts Catalog ..... Ref. X 292 P4 700 2.
- (3) ARRIEL 2 C1 Spare Parts Catalog..... Ref. X 292 N4 700 2.
- (4) ARRIEL 2 C2 Spare Parts Catalog..... Ref. X 292 N6 700 2.
- (5) ARRIEL 2 C2-CG Spare Parts Catalog ..... Ref. X 292 P8 700 2.
- (6) ARRIEL 2 B1 Illustrated Parts Catalog..... Ref. X 292 N5 600 2.
- (7) ARRIEL 2 B1A Illustrated Parts Catalog ..... Ref. X 292 P4 600 2.
- (8) ARRIEL 2 C1 Illustrated Parts Catalog..... Ref. X 292 N4 600 2.
- (9) ARRIEL 2 C2 Illustrated Parts Catalog..... Ref. X 292 N6 600 2.
- (10) ARRIEL 2 C2-CG Illustrated Parts Catalog ..... Ref. X 292 P8 600 2.

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### 2. Instructions to be incorporated

#### A. Implementation

This modification may be applied without removing the engine from the helicopter.

**(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**

Replace EECU.

**(2) At a Safran Helicopter Engines-approved Repair Center**

Refer to THALES repair reference documents (CMM, SB, etc.).

#### B. Operating instructions

**(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**

**(a)** All information saved on PRE TU 111C EECU must be recorded before EECU is removed: refer to the applicable ARRIEL 2 Maintenance Manual, task 73-21-00-900-801.

**(b)** Remove PRE TU 111C EECU: refer to the Helicopter Maintenance Manual.

**(c)** Install POST TU 111C EECU: refer to the Helicopter Maintenance Manual.

**(d)** All information saved on POST TU 111C EECU must be recorded after EECU has been installed: refer to the applicable ARRIEL 2 Maintenance Manual, task 73-21-00-900-801.

**(2) At a Safran Helicopter Engines-approved Repair Center**

Refer to THALES repair reference documents (CMM, SB, etc.).

#### C. Reconditioning and checks

**(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**

Do a ground run check: refer to the applicable ARRIEL 2 Maintenance Manual, task 71-02-13-280-801.

**(2) At a Safran Helicopter Engines-approved Repair Center**

Refer to THALES repair reference documents (CMM, SB, etc.).

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### D. Identification

- (1) **At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**
  - (a) Update the log card of the installed EECU and the log card of the removed EECU.
  - (b) Record the EECU replacement in section "C" of the engine log book and integrate the log card of the installed EECU.
  - (c) Record the replacement in section "F" (if any) of the engine log book.
  - (d) Send back the removed EECU, along with its log card, to a Safran Helicopter Engines-approved Repair Center.
  - (e) Tell Safran Helicopter Engines that the EECU has been replaced by sending back the fully-completed compliance certificate (Appendix 1).
- (2) **At a Safran Helicopter Engines-approved Repair Center**
  - (a) Record the application of this SB on the EECU log card.
  - (b) Tell Safran Helicopter Engines that this SB has been applied by sending back the fully-completed compliance certificate (Appendix 2).

### E. Routine maintenance

Not applicable.

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### 3. Material information

#### A. Basic information

The parts list required for the application of this SB is for one engine.

#### B. List of parts

(1) **At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**

New Part Number	Key	Qty	Description* / Item	Old Part Number	Key	Qty
<b>ARRIEL 2 B1</b>						
70BMF01010	A	1	EECU (PRE TU 144C) / 71-00-00-01-003	70BMF01000	F	1
70BMF01020	A	1	EECU (POST TU 144C and PRE TU 227) / 71-00-00-01-003	70BMF01030	F	1
70BMF01040	A	1	EECU (POST TU 227) / 71-00-00-01-003	70BMF01050	F	1
<b>ARRIEL 2 B1A</b>						
70BMK01010	A	1	EECU / 71-00-00-01-003	70BMK01000	F	1
<b>ARRIEL 2 C1</b>						
70BMD01070	A	1	EECU / 71-00-00-01-003	70BMD01020	F	1
70BMD01080	A	1	EECU / 71-00-00-01-003	70BMD01040	F	1
70BMD01060	A	1	EECU / 71-00-00-01-003	70BMD01050	F	1
<b>ARRIEL 2 C2</b>						
70BMH01010	A	1	EECU (PRE TU 93C) / 71-00-00-01-003	70BMH01000	F	1
70BMH01020	A	1	EECU (POST TU 93C) / 71-00-00-01-003	70BMH01030	F	1
<b>ARRIEL 2 C2-CG</b>						
70BMJ01020	A	1	EECU / 71-00-00-01-003	70BMJ01010	F	1
70BMJ01030	A	1	EECU / 71-00-00-01-003	70BMJ01040	F	1

\* Prices available upon request.

Key

A	Part incorporated by the modification
F	Part that can be modified at the manufacturer's site or at a Safran Helicopter Engines-approved Repair Center

**Note:** Installation of a PRE TU 111C EECU and a POST TU 111C EECU on the same helicopter is authorized.

(2) **At a Safran Helicopter Engines-approved Repair Center**

Refer to THALES repair reference documents (CMM, SB, etc.).

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### **C. Supply conditions**

Order supplies from:

Your local Safran Helicopter Engines Support Center

or

SAFRAN HELICOPTER ENGINES

Direction Support et Service

Département Commercial

40220 TARNOS - France

## SERVICE BULLETIN

**Objet : Attestation de remplacement du calculateur numérique par application du SB n° 292 73 2111 (TU 111C).**

**Subject: Compliance certificate for replacement of EECU through application of the SB No. 292 73 2111 (TU 111C).**

**Important / Important notice:**

**Après application des instructions spécifiées dans ce SB, veuillez compléter la présente attestation et la retourner par courrier ou courriel à :**

After application of the instructions specified in this SB please mail or email the fully-completed certificate to:

**SAFRAN HELICOPTER ENGINES**  
**Equipe Administration Base installée / Fleet Data Administrator Team, BP 25**

**40220 TARNOS - France**

Email : [data-fleet.fr.she@safrangroup.com](mailto:data-fleet.fr.she@safrangroup.com)

Information concernant le matériel / Equipment information						
Utilisateur Customer				N° Appareil Aircraft S/N		
	N/S - S/N	Réf. - P/N	TSN*	TSO*	CSN*	CSO*
Moteur Engine						
Calculateur numérique déposé AVANT TU 111C Removed PRE TU 111C EECU						
Calculateur numérique installé APRES TU 111C Installed POST TU 111C EECU						

\* TSN = Time Since New (Heures depuis neuf)  
 CSN = Cycles Since New (Cycles depuis neuf)

TSO = Time Since Overhaul (Heures depuis RG)  
 CSO = Cycles Since Overhaul (Cycles depuis RG)

**Opération faite par / Work done by:**

**Je certifie que le calculateur identifié ci-dessus a été installé selon les directives de ce SB.**

I certify that the above mentioned EECU has been installed according to the directives given in this SB.

Date [JJ/MMMM (en lettre)/AAAA ou/or DD/MMMM (letter)/YYYY]	Nom / Name	Fonction / Job title

**Signature :**

**ANNEXE 1 / APPENDIX 1**



## SERVICE BULLETIN

**Objet : Attestation d'application du SB n° 292 73 2111 (TU 111C).**

**Subject: SB No. 292 73 2111 compliance certificate (TU 111C).**

**Important / Important notice:**

**Après application des instructions spécifiées dans ce SB, veuillez compléter la présente attestation et la retourner par courrier ou courriel à :**

After application of the instructions specified in this SB please mail or email the fully-completed certificate to:

**SAFRAN HELICOPTER ENGINES,  
Equipe Administration Base installée / Fleet Data Administrator Team, BP 25**

**40220 TARNOS - France**

Email : [data-fleet.fr.she@safrangroup.com](mailto:data-fleet.fr.she@safrangroup.com)

Information concernant le matériel / Equipment information						
Utilisateur Customer				N° Appareil Aircraft S/N		
	N/S - S/N	Réf. - P/N	TSN*	TSO*	CSN*	CSO*
Moteur Engine						
Calculateur numérique modifié Modified EECU						

\* **TSN = Time Since New** (Heures depuis neuf)  
**CSN = Cycles Since New** (Cycles depuis neuf)

**TSO = Time Since Overhaul** (Heures depuis RG)  
**CSO = Cycles Since Overhaul** (Cycles depuis RG)

**Opération faite par / Work done by:**

**Je certifie que le calculateur identifié ci-dessus a été modifié selon les directives de ce SB.**

I certify that the above mentioned EECU has been modified according to the directives given in this SB.

Date [JJ/MMMM (en lettre)/AAAA ou/or DD/MMMM (letter)/YYYY]	Nom / Name	Fonction / Job title

**Signature :**

**ANNEXE 2 / APPENDIX 2**