AIRCRAFT SYSTEMS

MAINTENANCE SYSTEM
### DSC-45-10 Description

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<thead>
<tr>
<th>Localization Title</th>
<th>Toc Index</th>
<th>ID</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSC-45-10 FAILURE/FAULT CLASSIFICATION</td>
<td>E</td>
<td>1</td>
<td>Effectivity update: The information no longer applies to MSN 0279.</td>
</tr>
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<td>DSC-45-10 FAILURE/FAULT CLASSIFICATION</td>
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<tr>
<td>DSC-45-20 Last (or Current) Leg ECAM Report - Post Flight Report Print</td>
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<td>1</td>
<td>Effectivity update: The information no longer applies to MSN 0279.</td>
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<td>DSC-45-20 ACARS Print Program</td>
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<td>3</td>
<td>Effectivity update: The information no longer applies to MSN 0395.</td>
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</table>
The purpose of the Centralized Fault Display System (CFDS) is to make the maintenance task easier by displaying fault messages in the cockpit and permitting the flight crew to make some specific tests.

There are two levels of maintenance:
- at the line stop: removal and replacement of equipment
- at the main base: troubleshooting

The CFDS includes:
- the BITE (Built-In Test Equipment) for each electronic system
- a central computer, the Centralized Fault Display Interface Unit (CFDIU)
- two MCDUs (Multipurpose Control and Display Units), used also for FMGS (Flight Management and Guidance System), AIDS (Aircraft Integrated Data System), and ACARS (Aircraft Communication And Reporting System, if installed), which work with the CFDIU to display information or initiate tests
- one printer.

If a main channel of the CFDIU fails, the backup channel takes over.

In NORMAL mode, the CFDS records and displays the failure messages transmitted by each system BITE.

In INTERACTIVE mode, the CFDS allows any BITE to be connected with the MCDU in order to display the maintenance data stored and formatted by the BITE or to initiate a test.
ARCHITECTURE

Ident.: DSC-45-10-00001493.0001001 / 24 APR 12
Applicable to: ALL

AIRCRAFT SYSTEMS

GENERAL
PARAMETERS:
- DATE/TIME
-FLT N°
-AIRCRAFT IDENT
-FLT PHASES

CFDIU

AIDS
CAPT
MCDU1
ACARS
MU
VHF 3
MCDU3

FMGS
1 AND 2
F/O

MCDU2
PRINTER
The Centralized Fault Display System (CFDS) identifies the faulty system and puts any failures or faults into one of three classes:

- **Class 1**: Failures indicated to the flight crew by means of the ECAM, or other flight deck effect. They must be repaired or entered in the MEL (Minimum Equipment List) before the aircraft can depart.

- **Class 2**: Faults indicated to maintenance personnel by the CFDS and which trigger a MAINT status entry on the maintenance part of the ECAM status page. The aircraft can operate with these faults, but they must be rectified within the timescale defined in the Trouble Shooting Manual (TSM).

- **Class 3**: Faults indicated to maintenance personnel by the CFDS, but which do not trigger a MAINT status. The operator may have these faults corrected at his convenience.

### Failure/fault classes

<table>
<thead>
<tr>
<th>Failure/fault classes</th>
<th>Class 1</th>
<th>Class 2</th>
<th>Class 3</th>
</tr>
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<tbody>
<tr>
<td><strong>Operational consequences</strong></td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td><strong>Indication to the flight crew</strong></td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Automatically displayed</td>
<td></td>
<td>Available on ECAM status page.</td>
<td></td>
</tr>
<tr>
<td>- Warning or caution messages on Engine Warning Display</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Flag or indication in the flight deck.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dispatch consequences</strong></td>
<td>Refer to MEL may be: &quot;GO&quot; &quot;GO IF&quot; &quot;NO GO&quot;</td>
<td>Refer to MMEL/MI-00-08 ECAM and MAINTENANCE STATUS</td>
<td>MEL not applicable</td>
</tr>
<tr>
<td><strong>Indication to the maintenance team</strong></td>
<td>YES</td>
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<td>YES</td>
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<tr>
<td>Automatically print out at the end of each flight: Fault messages on the CFDS Post Flight Report.</td>
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<td>Available on request through system report/Test</td>
<td></td>
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<tr>
<td>Fault messages on the CFDS Post Flight Report.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FUNCTIONS OF THE CENTRALIZED FAULT DISPLAY SYSTEM (CFDS)

The main functions of the CFDS are:
- Obtaining and storing messages transmitted by the connected system BITes, or by the Flight Warning Computer (Warning and Caution titles)
- Detailing the maintenance phases.

- Presenting maintenance reports:
  - Last leg report
  - Last leg ECAM report
  - Previous leg report
  - Avionics status
  - System report test
  - Post-flight report.
The CFDS uses menus displayed on the MCDU. The operator selects functions or reports from these menus. Pressing the MCDU MENU key and then selecting CFDS brings up the MAINTENANCE MENU page (different pages for the aircraft in flight and the aircraft on the ground).
The LAST LEG REPORT (on the ground) or the CURRENT LEG REPORT (in flight), list all class 1 failures and class 2 faults and all system failure and system fault messages received by the CFDS during the last flight leg or the current flight leg. Pressing the IDENT key displays a list of the systems
(called identifiers) affected by the failure or fault, which helps the pilot or maintenance person to identify the failure or fault.

In flight:
The CURRENT LEG ECAM REPORT displays the primary and independent warning (class I) messages and MAINTENANCE STATUS (class II) messages of the current flight leg.

On the ground:
The LAST LEG ECAM REPORT displays the primary and independent warning (class I) messages plus MAINTENANCE STATUS (class II) messages of the last flight leg.
Note: This screen displays PRINT only if the printer is installed.

Ident.: DSC-45-20-A-00001500.0001001 / 14 MAY 12

1 Applicable to: MSN 0112, 0342

POST FLIGHT REPORT PRINT

At the end of a flight, LAST LEG and LAST LEG ECAM REPORTS are printed out automatically after the last engine shutdown. The flight or ground crew can also print them out by selecting POST FLIGHT REP PRINT.

The report first lists the ECAM warnings, then the FAULT messages.
At the end of a flight, LAST LEG and LAST LEG ECAM REPORTS are printed out automatically after landing (30 s after reaching 80 kt). The flight or ground crew can also print them out by selecting POST FLIGHT REP PRINT.

It is also automatically sent to the ground, using ACARS system after the last engine shutdown, or manually by selecting the SEND key.
The star is deleted after action on the key. As long as the star is not redisplayed, the operator cannot change the page.

Report is transmitted to ACARS

Not transmitted (ACARS not available) The key must be pressed again

DISPLAYED AMBER

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### CFDS POST FLIGHT REPORT

<table>
<thead>
<tr>
<th>A/C IDENT</th>
<th>DATE</th>
<th>GMT</th>
<th>FLTN</th>
<th>CITY PAIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>XY-ABCD</td>
<td>FEB23</td>
<td>2355</td>
<td>XY-1234</td>
<td>LFBO/LFPO</td>
</tr>
</tbody>
</table>

**ECAM WARNINGS**

- GMT: 1012 27-00-06 SFCC 1 FAULT
- 0954 22-00-06 LAND3 NO P
- 0933 26-12-05 ENG 1 LOOP A FAULT
- 0922 22-00-05 ATS DISCONNECT
- 0915 28-21-04 FUEL L TK PUMP 1 LO PR
- 0904 36-22-04 BLEED LOOP

**FAULT MESSAGES**

<table>
<thead>
<tr>
<th>GMT</th>
<th>ATA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1105 26-12-00</td>
<td>CHECK LGCU-PHC 1 INTERFACE (INTMT)</td>
<td></td>
</tr>
<tr>
<td>1012 27-00-00</td>
<td>FIU 1-NO SFCC 1 DATA</td>
<td></td>
</tr>
<tr>
<td>0954 22-00-00</td>
<td>FMGC 1</td>
<td></td>
</tr>
<tr>
<td>0933 36-11-00</td>
<td>BMC 1</td>
<td></td>
</tr>
<tr>
<td>0915 28-21-00</td>
<td>FUEL L TK PUMP 1 QM</td>
<td></td>
</tr>
<tr>
<td>0904 26-12-00</td>
<td>CHECK R WING LOOP A</td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS**

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### PREVIOUS LEGS REPORT

Ident.: DSC-45-20-00001501.0001001 / 01 OCT 12

Applicable to: ALL

This report gives access to the POST FLIGHT REPORTS of the previous 63 flight legs.
On ground, the Operator can print copies of the screen. If ACARS is installed, the Operator can send the flight report (Refer to DSC-45-20 Last (or Current) Leg ECAM Report - Post Flight Report Print).

### AVIONICS STATUS

**Ident.:** DSC-45-20-00001502.0001001 / 09 DEC 09  
**Applicable to:** ALL

This screen displays the list of systems affected by a failure or fault. If a system is affected by at least a Class 3 fault, CLASS 3 appears beside it. The display is continuously updated.
This screen gives the operator access to all electronic systems. The CFDIU enters into interactive dialogue with the selected system.
In the above example, the operator has called up menus of the selected systems:
- LAST or PREVIOUS LEG REPORT presents the list of Line-Replaceable Units (LRUs) affected by a failure.
- LRU IDENTIFICATION contains the part numbers of all LRUs in the system.
- GND SCANNING runs the flight monitoring on the ground and indicates the faulty LRU.
- CLASS 3 FAULTS lists class 3 faults detected by the system during the last flight leg.
- SYSTEM CONFIGURATION presents the system configuration in a digital form.
Note: These screens (except LAST or PREVIOUS LEG REPORT) are not shown above.

**GMT/DATE INITIALIZATION**

Ident.: DSC-45-20-00001504.0001001 / 09 DEC 09
Applicable to: ALL

A CFDIU clock is synchronized with the cockpit clock in order to keep GMT (UTC) displayed on the ECAM lower display (except in flight Phases 1 and 2, if the weight and balance system is installed). If the cockpit clock fails, the CFDIU clock continues to display GMT (UTC) on the ECAM lower display.

If electrical power is interrupted for more than 200 ms, the crew initializes GMT (UTC) and the DATE via the MCDU:
- Write GMT (UTC) in the scratchpad, then press the “INIT GMT” key.
- Do the same for the month and day.
If the CFDIU’s main channel fails, the backup channel allows the CFDS to operate in backup mode:
- on the ground only
- through MCDU1
- in one mode of operation only: SYSTEM REPORT/TEST
- without the PRINTER or ACARS.

The system changes over from main channel to backup channel:
- Automatically in case of an important failure (power supply, for example). In this case, when the operator selects CFDS on the MCDU MENU, it displays the BACKUP MODE page.
- Manually if the operator selects BACKUP MODE on the CFDS menu after a minor failure.
This function gives access to reprogramming page. The programming is provided by the ACARS or manually (on the ground or in flight):
No star indicates an ACARS programming. The YES indicates that the REAL TIME FAIL will be automatically transmitted to the ACARS.

The star indicates a manually modified programming; pressing the corresponding key changes the YES into a NO. The YES indicates that the REAL TIME FAIL page will be printed simultaneously with the transmission to the ACARS.

**Note:** The CFDIU memorizes all manual programming so that at initialisation the last configuration will be retained.
The printer prints reports from the following systems (if installed): ACARS, AIDS, FMGC, CFDIU and EVMU. It prints these on paper, and does so either on the ground or in flight. The printer is installed at the rear of the pedestal on the right side.
(1) **SLEW sw:**
The SLEW switch is used to feed paper after having loaded a new roll.

(2) **PRINTER DOOR LATCH:**
The printer door latch locks the door used for loading paper.
### BUS EQUIPMENT LIST

Ident.: DSC-45-40-00001510.0001001 / 09 DEC 09
Applicable to: ALL

<table>
<thead>
<tr>
<th></th>
<th>NORM</th>
<th>EMER ELEC</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>AC</td>
<td>DC</td>
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<tr>
<td>CFDS</td>
<td></td>
<td>DC1</td>
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</table>

82U A318/A319/A320/A321 FLEET
FCOM A 07 OCT 11
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