European Aviation Safety Agency

Jerome Bruel

Electrical system, HIRF and Lightning

WLAN and Onboard Mobile Telephone System

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WLAN

The WLAN STC certification in EASA

WLAN

➤ Certification Aspects

A « Generic » Certification Review Item (Acceptable means of compliance) is issued for each project.

It is very similar to the FAA issue Paper template.

It covers the following topics:

WLAN

A - The demonstration of the interference with avionics systems necessary for continued safe flight and landing

1. Hardware aspects of certification
2. Software aspects of certification
3. Safety assessment process
4. Electromagnetic compliance demonstration
5. Electrical architecture/design objectives
6. Configuration management
7. procedures
8. Continued airworthiness

WLAN

B - The operational aspect

The restriction on use of PED's by passenger

The airplane flight manual supplement

WLAN

The CRI refer to the following requirements and advisory material

CS 25.601, 25.1301, 25.1309, 25.1353, 25.1431, 25.1529, 25.1581

JAA TGL No. 29 - Guidance concerning the use of Portable Electronic Devices on Board Aircraft

JAA TGL No. 17 - Passenger Service and In-Flight Entertainment (IFE) Systems

JAATGM 21/07-   Electrical Wiring Policy

AC 25.1309 –   Equipment, Systems and Installations

EUROCAE ED12B/RTCA DO 178B

EUROCAE ED14D / RTCA DO 160E

Compliance with TGM/21/07 is required when certification basis does not include CS25 subpart H (Introduced at Amdt 5) or Special Condition CRI H-01 (EWIS) introduced through CRI A-01.

JAA TGL 17, JAA TGL 29, INT POL 25.2, and AMC 25 and related advisory material

WLAN

➤ **Since 2004 many applications for the installation of a WLAN system onboard aircraft have been received by EASA and approved.**

Onboard Mobile Telephone System

Onboard Mobile Telephone System certification

Onboard Mobile Telephone System

➢ **Certification Aspects**

➢ **Operational aspects**

➢ **Telecom operating license aspects**

Onboard Mobile Telephone System

➤ **Certification Aspects**

A « Generic » Certification Review Item (Interpretative material) is issued for each project.

It covers the following topics:

Onboard Mobile Telephone System

1. **The certification plan**
2. **The safety objectives**
3. **The acceptable means of compliance**
4. **The AFM**
5. **The instructions for contined airwothiness**
6. **The follow-on installation**
7. **The flight operation**
8. **The Design data**

GSM on board

The CRI refer to the following requirements and advisory material

CS 25.581, 25.791, 25.869(a), 25.899, 25.1301, 25.1307, 25.1309, 25.1310, 25.1322, 25.1353, 25.1355, 25.1357, 25.1360, 25.1362, 25.1431, 25.1457, 25.1459, 25.1501, 25.1529 The flight operation& Appendix H, 25.1541, 25.1581, 25.1585, EU OPS 1.110, EU OPS 1.285, JAA TGM/21/07

➢ Compliance with TGM/21/07 is required when certification basis does not include CS25 subpart H (Introduced at Amdt 5) or Special Condition CRI H-01 (EWIS) introduced through CRI A-01.

➢ JAA TGL 17, JAA TGL 29, INT POL 25.2, and AMC 25 and related advisory material

Onboard Mobile Telephone System

- Since 2005 eight applications for the installation of a GSM system onboard aircraft have been received by EASA

- Five of them have already been approved

- Three projects are still ongoing

Onboard Mobile Telephone System

➤ **P-EASA.A.S.02865**

Applicant: ATS International/Aeroconseil. AeroMobile System

Aircraft: Airbus A340.

Status Technical Visa issued (similar to FAA STC). System installed on one Emirates A340-313 aircraft currently (A6-ERS/MSN139), awaiting operational approval from GCAA.

➤ **P-EASA.A.S.02866**

Applicant: ATS International/Aeroconseil. AeroMobile System

Aircraft: Airbus A330.

Status : Technical visa issued

➤ **P-EASA.A.S.03128**

Applicant : ATS International/Aeroconseil. AeroMobile System

Aircraft: Boeing 777.

Status: Technical visa issued

GSM on board aircraft

- P-EASA.A.C.03847
- Applicant: AIRBUS INDUSTRIE Installation OnAir system
- Aircraft: Airbus A318
- Status: Technical visa issued. Partially validated for all Airbus single aisle family
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- P-EASA-A.S 03091
- Applicant; H4 Aerospace
- Aircraft: Boeing 737
- Status: Technical visa issued
- Ryan Air started the service on some flight leaving or arriving in Dublin. The total Ryanair Boeing 737 fleet (170 aircrafts) will be equipped within 18 months

Onboard Mobile Telephone System

- **P-EASA.A.S.03600**
- **Applicant : Aeroconseil**
- **Aircraft : Boeing 767 STC.**
- **CAA Contracted task.**
- **Status = ongoing. The system provider (Aeromobile) is sorting out some system operational affectivity issues before this STC is pursued further.**

- **P-EASA.A.S.03914**
- **Applicant : Aviation Centre Cologne**
- **Aircraft : CL600 STC.**
- **EASA Team task**
- **Status = ongoing, CRI have been sent to applicant but nothing was received today**

- **P-EASA.A.C.11716**
- **Applicant: AIRBUS Hamburg**
- **Aircraft: AIRBUS A340.**
- **EASA Team task**
- **Status = ongoing. Certification plan**

Onboard Mobile Telephone System

➤ **The approval is granted for a specific registry number with some exception (for example EASA has approved the OnAir system installation on the Airbus A318. This approval was initially limited to Airbus A318 MSN 3009 and any other A318 of identical build and modification standard).**

➤ **After additional substantiations this approval is now partially validated for all Airbus single aisle family.**

Onboard Mobile Telephone System

- These approvals are limited to the airworthiness certification of the system .

- Additional approvals and or licences may be required from other regulatory bodies before use . The operator must obtain an operating approval from their National Airworthiness Authority .

- A telecom operating licence from the appropriate agency/agencies is also required .

Onboard Mobile Telephone System

➤ **Some European Airline have design and operational approval but these systems have not yet been activated.**

➤ **Ryan Air started the service on some flight leaving or arriving in Dublin. The total Ryanair Boeing 737 fleet (170 aircrafts) will be equipped within 18 months.**

➤ **No event were reported by this company.**

➤ **We have no feedback from Quantas that propose this service in their inland flights.**

Onboard Mobile Telephone System

➢ **The certication review item will be updated in order to cover the new mobile standards. This work started with the ongoing project with Airbus Hamburg on A340 (OMTS)**

WLAN and
Onboard Mobile Telephone System

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Questions?