

Certification Memorandum

ATN B1 Data Link Multi-Frequency Capability

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Regulatory requirement(s): CS-ACNS Issue 2, Subpart B, Section 2 – Data link services (DLS)

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Log of issues

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1. Introduction

1.1. Purpose and scope

The purpose of this Certification Memorandum is to provide clarification to applicants for airworthiness approval when installing Data link Services (DLS) compliant with Commission Regulation (EC) 29/2009¹. Topic is the difference that exists between the Commission Regulation and the 'Certification Specifications and acceptable means of compliance for Airborne Communications, Navigation and Surveillance' (CS-ACNS)² with regards to the implementation of Multi-Frequency capability in Data Link installations over VDL Mode 2.

1.2. References

It is intended that the following reference materials be used in conjunction with this Certification Memorandum:

Reference	Title	Code	Issue	Date
CS-ACNS	CS-ACNS Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigations and Surveillance, Subpart B – Communications (COM) , Section 2 – Data Link Services (DLS)	CS-ACNS	2	26.04.2019
ARINC 631-6	VHF Digital Link (VDL) Mode 2 Implementation Provisions	ARINC 631	6	06.10.2010
Commission Regulation (EC) No 29/2009	Commission Regulation (EC) No 29/2009 of 16 January 2009 laying down requirements on data link services for the Single European Sky	Commission Regulation (EC) No 29/2009		16.01.2009
IR (EU) No. 441/2014	Commission Implementing Regulation (EU) No 441/2014 of 30 April 2014 amending Regulation (EC) No 29/2009 laying down requirements on data link services for the single European sky [REPEALED]	Commission Implementing Regulation (EU) No. 441/2014		30.04.2014
IR (EU) No. 2015/310	Commission Implementing Regulation (EU) 2015/310 of 26 February 2015 amending Regulation (EC) No 29/2009 laying down requirements on data link services for the single European sky and repealing Implementing Regulation (EU) No 441/2014	Commission Implementing Regulation (EU) No. 2015/310		26.02.2015

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1547476138195&uri=CELEX:02009R0029-20160205>

² <https://www.easa.europa.eu/sites/default/files/dfu/2013-031-R-Annex%20to%20ED%20Decision%202013-031-R.pdf>



Reference	Title	Code	Issue	Date
IR (EU) 2019/1170	Commission Implementing Regulation (EU) 2019/1170 of 8 July 2019 amending and correcting Regulation (EC) No 29/2009 laying down requirements on data link services for the single European sky	Commission Implementing Regulation (EU) 2019/1170		08.07.2019
ICAO Annex 10, Vol. III, Part I	Digital Data Communication Services		Amdt. 81	23. 11.2006
			Amdt. 90	08.11.2018

1.3. Abbreviations

ANSP	Air navigation service provider
CSC	Common Signalling Channel
DLS	Data Link Services
VDL	VHF Data Link

2. Background

CS-ACNS provides airworthiness and interoperability requirements for the purpose of compliance of on-board Communication, Navigation and Surveillance systems, with equipage requirements. More specifically, compliance with Subpart B section 2 of these Certification Specifications addresses compliance with Commission Regulation (EC) No 29/2009 of 16 January 2009 laying down requirements on Data Link Services (DLS) for the Single European Sky, as latest revised by IR (EU) 2019/1170

VDL Mode 2 is the sub-network that supports the connectivity between aircraft and the Air Navigation Service Providers (ANSP) through the use of Data Link services. During the initial deployment, Data Link services were supported by only one frequency, known as 'Common Signalling Channel' (CSC). Afterwards, additional frequencies have been deployed by the CSPs (Communication Service Providers) in order to increase capacity.

Article 6 of the Commission Regulation (EC) No 29/2009 provides the operators' requirements with regards to the equipage to support Data Link services and requires that the air-ground communication is performed in accordance with Part B Annex IV of that regulation. Annex IV point 5 further refers to Annex III point 5, which in turn refers to ICAO Annex 10 Volume III Part I, where in paragraph 6.1.2 the "auto tune" capability is addressed. This feature is also known as multi-frequency capability.

Note - The changes in ICAO Annex 10 Volume III Part I between amendment 81 as referenced in the initial version of regulation (EC) No 29/2009 and amendment 90 as referenced currently are of editorial nature for the relevant VDL Mode 2 part.



3. EASA Certification Policy

The Commission Regulation's reference to ICAO Annex 10, Volume III, Part I paragraph 6.1.2 requires aircraft systems supporting Data Link Services to be capable of automatically tuning to multiple frequencies. Thus, Commission Regulation (EC) 29/2009 requires aircraft to be multi-frequency capable.

This requirement is currently not reflected at the appropriate level in CS-ACNS: Although AMC1 ACNS.B.DLS.B1.025 refers to ARNC 631-6 and therefore to multi-frequency capable systems, there is no explicit CS level requirement for multi-frequency capability in Book 1.

Similarly, the Special Condition that was in use prior to the publication of CS-ACNS, did not contain a requirement for multi-frequency capability either, although the interpretive material that was issued to applicants together with the Special Condition referred to ARNC 631-5 and therefore to multi-frequency capable systems. The Special Condition also advised that the following statement should be introduced in the AFM:

"The aircraft ATC Data Link system does support multi-frequency operation as defined in ARINC Spec. 631-5."

CS-ACNS will be amended as soon as practicable to include a specific requirement for multi-frequency capability. Until such time, EASA will apply the requirement for multi-frequency as stipulated in Commission Regulation (EC) 29/2009 to applications for the installation or modification of VDL Mode 2 systems supporting DLS.

Note - Applicants for airworthiness approval of any installations which support data link applications which communicate over VDL Mode 2, including those not currently defined in the DLS Regulation (e.g. ACARS), are recommended to also consider implementing multi-frequency functionality.

3.1. Who this Certification Memorandum affects

This Certification Memorandum affects applicants for airworthiness approval of modifications of existing VDL Mode 2 designs or new installations of VDL Mode 2 designs intended to comply with Commission Regulation (EC) No 29/2009.

4. Remarks

1. Comments regarding this EASA Certification Memorandum should be referred to the Certification Policy and Safety Information Department, Certification Directorate, EASA. E-mail CM@easa.europa.eu.
2. For any question concerning the technical content of this EASA Certification Memorandum, please contact:

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