



European Union Aviation Safety Agency

Comment-Response Document (CRD) 2023-07

RELATED NPA: 2023-07 — RELATED ED DECISION: 2024/003/R — RMT.0524 (SUBTASK 1)

16.05.2024

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1. Summary of the outcome of the consultation

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Comments and stakeholders

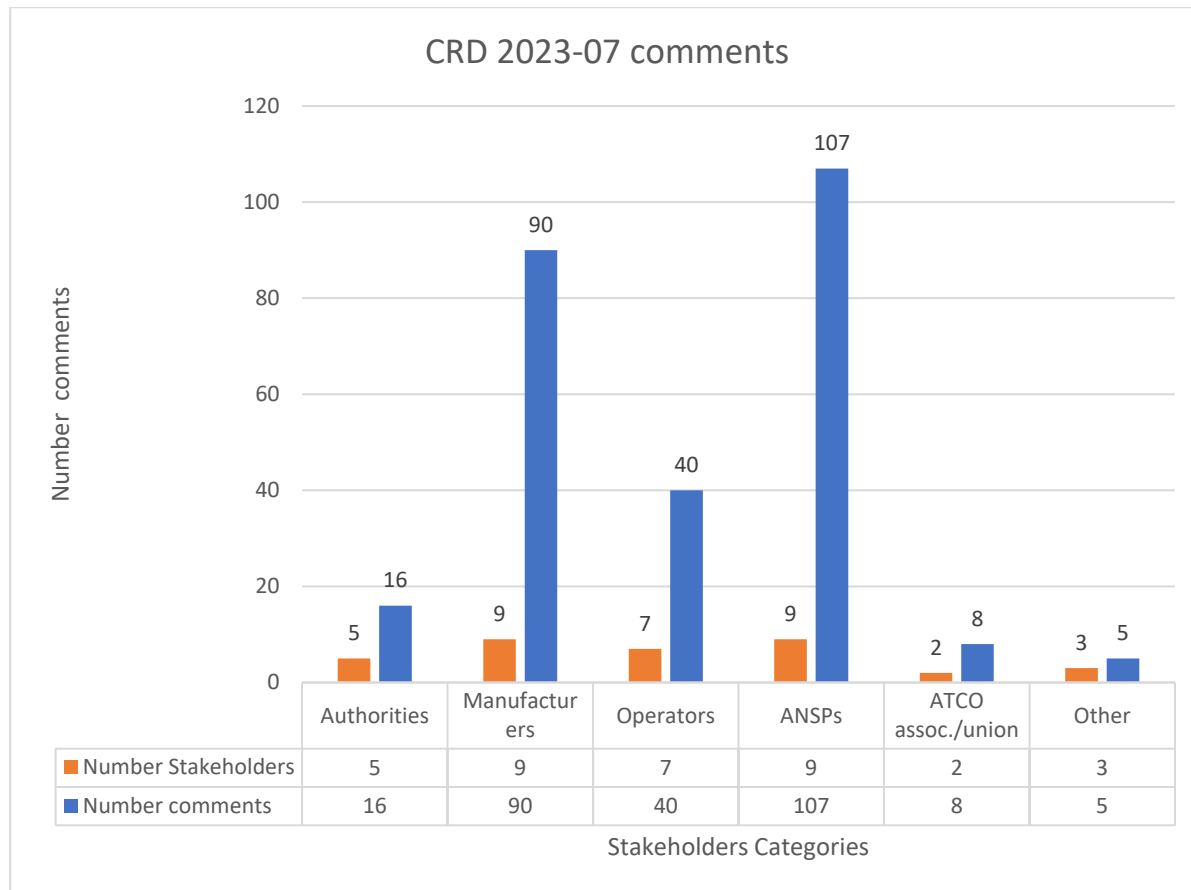
A total of 279 comments were provided through the CRT to NPA 2023-07. As 13 comments were placed on the NPA quality and are only used for internal quality assurance processes, the total number of comments responded to and accounted for is 266.

In total, 35 stakeholders provided comments from the following categories:

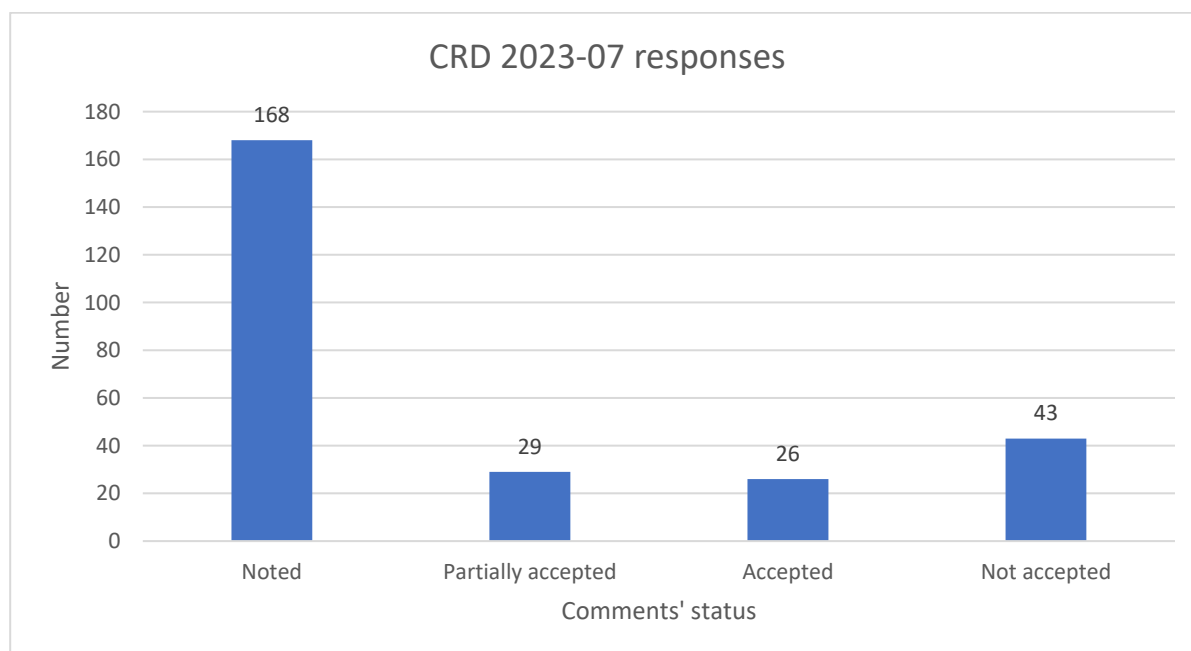
- national competent authorities,
- manufacturers/industry,
- operators / operator associations,
- ANSPs,
- ATCO associations/unions,
- others.



The comments are structured per total number and stakeholder category as follows:



The EASA responses provided in the CRD are categorised as follows:



Summary of the topics commented

EASA thanks all stakeholders for reviewing the proposal.

However, it was noted that many comments addressed issues which are outside the scope of the proposed CS-ACNS amendment (CS-ACNS Issue 5). Thus, while such concerns are acknowledged, in many cases a definitive answer could not be provided within the scope of this rulemaking task.

Furthermore, most of the comments were provided by ANSPs and operators, although the main stakeholders affected by the proposed CS-ACNS amendment are manufacturers (design and production organisations and manufacturer associations).

Summary of the main NPA 2023-07 topics commented

- 1. Reference to Future Connectivity for Aviation (FCAV):** Several stakeholders (operators, ANSPs, associations) commented that the FCAV white paper developed by EASA, the FAA, Airbus and Boeing does not gather the opinion of all data-link-relevant stakeholders.

The FCAV white paper proposes a vision and a transitional road map for the future aviation connectivity landscape, defining a blueprint for the modernisation and harmonisation of aviation data communication. Its intent was to start with an agreement of a limited number of stakeholders and to form the basis for a wider consultation. Although the FCAV white paper was referenced within the explanatory note of NPA 2023-07, it was not the reference for the proposed regulatory text, which only addressed aircraft certification objectives with respect to the transmission of ADS-C EPP data.

It should be noted that the majority of manufacturers, in their comments to the NPA, support the FCAV proposal.

- 2. Continuation of RMT.0524:** Commentators raised concerns about the closure of RMT.0524 and requested that it should be maintained to address future aspects of data-link-related regulatory material.

EASA wishes to clarify that RMT.0524 will be closed with the publication of CS-ACNS Issue 5. The arrangements for the processing of future amendments to regulatory material related to data link activities will be addressed in future editions of the European Plan for Aviation Safety (EPAS), taking into consideration the applicable regulatory frameworks and existing rulemaking tasks purposed for their evolution.

- 3. 'Full' ATS B2 vs ADS-C EPP capability:** Comments were received from ANSPs with regard to the scope of the amendment reflecting only the ADS-C EPP (Extended Projected Profile) part of the ATS B2 standard instead of a 'full' ATS B2 Rev B standard. These commentators were concerned that such an approach would result in fragmented airborne equipment implementation and may hamper the drive towards globally harmonised air-ground data link operations. However, other stakeholders (in particular, aircraft and system manufacturers) supported this approach as being the only possible route permitting manufacturers to support operators in meeting the deadline specified in Commission Implementing Regulation (EU) 2021/116¹. In addition, commentators agreed that the proposal provides flexibility for manufacturers and

¹ Commission Implementing Regulation (EU) 2021/116 of 1 February 2021 on the establishment of the Common Project One supporting the implementation of the European Air Traffic Management Master Plan provided for in Regulation (EC) No 550/2004 of the



operators to comply with either the minimum requirement proposed in Regulation (EU) 2021/116 and voluntarily choose to implement additional ATS B2 capabilities.

This amendment to CS-ACNS (Issue 5) provides the minimum data link system capability requirements needed to support compliance with Commission Implementing Regulations (EU) 2023/1770² and (EU) 2021/116. However, EASA will support applicants that voluntarily choose to add more ATS B2 capabilities beyond the ADS-C EPP minimum requirements, including the use of later versions of ED-228 and ED-229. Please, see GM2 ACNS.B.DLS.001.

4. **ICAO Doc 9705 vs Doc 9880 compatibility:** Several commentators raised doubts about the completeness of ICAO Doc 9880, which is intended to replace ICAO Doc 9705.

With regard to CS-ACNS, as ICAO Doc 9880 does not consistently and completely replace the provisions of ICAO Doc 9705, and since the focus of the subject amendment is to have minimum changes to support compliance with Commission Implementing Regulations (EU) 2023/1770 and (EU) 2021/116, references to ICAO Doc 9705 were kept unchanged. The instances where ICAO Doc 9705 is referenced in CS-ACNS were reduced as a result of the consolidation of various AMC and GM.

5. **ADS-C Version 1:** Few stakeholders requested that CS-ACNS should more explicitly define the ADS-C version. EASA clarifies in GM1 ACNS.B.DLS.001 *Applicability* that the ADS-C version used to provide ADS-C EPP should be Version 1.
6. **SATCOM certification requirements:** Stakeholders enquired whether certification specifications for SATCOM data link installations can also be provided in CS-ACNS as part of the proposed amendment.

Although AMC1 ACNS.B.DLS.005 has been added to highlight that DLS VDLM2 based installations are acceptable, SATCOM data link installations have been already accepted by EASA through other certifications means. A further assessment of CS-ACNS may be undertaken as part of future data link rulemaking activities.

7. **CP1 maturity:** Stakeholders commented that the maturity deadline laid down in Commission Implementing Regulation (EU) 2021/116 should not be linked with the availability of CS-ACNS as there are aircraft types which are ATS B2 capable (including ADS-C EPP) that have been already certified in accordance with already available standards.

While the availability of CS-ACNS contributes to fulfilling the maturity gate requirements, the readiness for the implementation of the ATM functionality 6 (AF6) defined in Commission Implementing Regulation (EU) 2021/116 is not assessed within this rulemaking task, and is subject to a different assessment.

8. **Challenges to comply with Commission Implementing Regulation (EU) 2021/116 deadlines:** Comments were received with regard to the implementation date for ADS-C EPP capability. This is seen as being

European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014 (OJ L 36, 2.2.2021, p. 10) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R0116>).

² Commission Implementing Regulation (EU) 2023/1770 of 12 September 2023 laying down provisions on aircraft equipment required for the use of the Single European Sky airspace and operating rules related to the use of the Single European Sky airspace and repealing Regulation (EC) No 29/2009 and Implementing Regulations (EU) No 1206/2011, (EU) No 1207/2011 and (EU) No 1079/2012 (OJ L 228, 15.9.2023, p. 39) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023R1770&qid=170669655238>).



extremely challenging as some aircraft configurations require significant design changes. In addition, commentators expressed the view that any subsequent requirement to comply with additional ATS B2 capabilities envisioned after 2030 will also be demanding for manufacturers and operators. Therefore, it was proposed to deploy all the envisaged ATS B2 capability by 2032 as opposed to a 2-step approach.

The challenging equipage deadlines required by Commission Implementing Regulation (EU) 2021/116 are acknowledged; however, the review of this requirement is outside the scope of this rulemaking task.

9. **Regulation implementation enforcement:** Stakeholders commented that it is unclear how the Regulation will be enforced to keep non-compliant aircraft below FL285.

There is no need for additional regulatory action as the existing regulatory framework supports the airspace usage requirements implementation. Datalink system airspace equipage regulation enforcement for operators falls under the oversight responsibility of the operator's competent authority. Operators' non-compliance with the data link system equipage requirement needs to be reported in accordance with the currently applicable regulations. Furthermore, enforcement challenges are outside the scope of this rulemaking task.

10. **DLS improvements:** Few stakeholders submitted comments recommending various improvements to CS-ACNS with regard to Commission Implementing Regulation (EU) 2023/1770.

While the intent of the subject amendment (CS-ACNS Issue 5) is to provide the minimum certification specifications to support compliance with Commission Implementing Regulations (EU) 2023/1770 and (EU) 2021/116, such improvements may be considered at the next revision of CS-ACNS for DLS, in accordance with future EPAS editions.

In NPA 2023-07, EASA invited stakeholders to comment on the following topics:

1. **Requirement on protection mechanism:** EASA enquired within the NPA whether there is still a need for protection mechanism specifications in CS-ACNS.

Most of the responses recommended removing such references, while few argued that there is still a need for them. Taking into account the feedback received, EASA consolidated the AMC and GM, moved some content outside the scope of the protection mechanism specifications, and removed some references while maintaining references to interoperability standards.

2. **Adequacy of AMC1 ACNS.B.DLS.077:** EASA enquired within the NPA whether the material provided in AMC1 ACNS.B.DLS.077 represents the minimum and sufficient means to demonstrate compliance with the ADS-C EPP message exchange requirements in CS ACNS.B.DLS.077.

Only two stakeholders responded to this question, and in their view the requirements are appropriate.

3. **Adequacy of CS ACNS.B.DLS.097 and of the associated AMC:** EASA enquired within the NPA whether the material provided in CS ACNS.B.DLS.097 and AMC1 ACNS.B.DLS.097 represents the minimum and sufficient safety and performance requirements and adequate means of compliance to support intended operations.



Three stakeholders responded to this question, stating that in their view the requirements are appropriate. The fourth stakeholder assessed the regulatory requirement as just the minimum necessary, while advising that increased specificity would help improve interoperability.

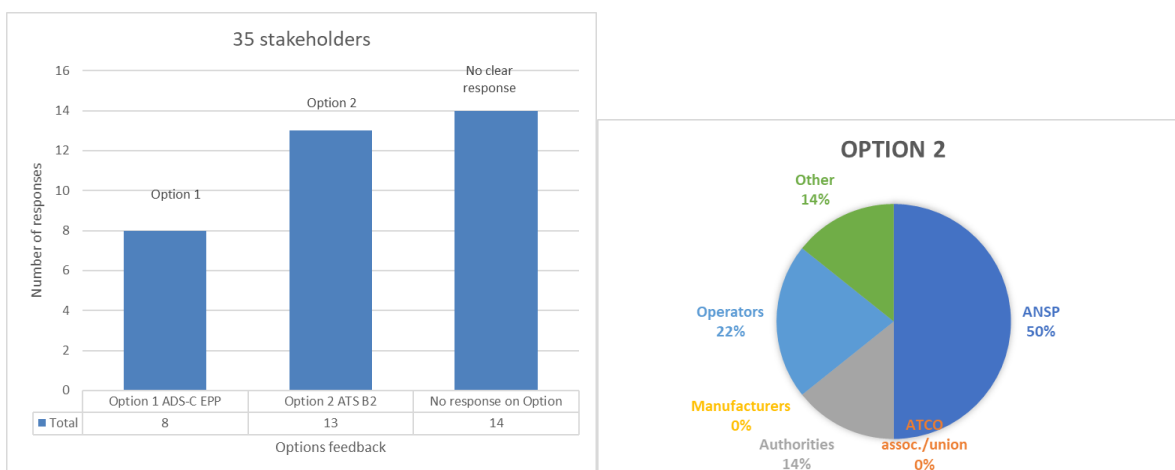
4. Layers requirement: EASA enquired within the NPA whether there is still a need for various layer specifications in CS-ACNS.

Some responses recommended removing the layer specifications from CS-ACNS as such specifications are too detailed. While reflecting upon the feedback received, EASA concluded that the requirements for interoperability layers need to be present in CS-ACNS. Such requirements point to technical details from ICAO Doc 9705 and the related means of compliance. Considering that the purpose of the subject amendment is to minimise changes while supporting compliance with Commission Implementing Regulation (EU) 2021/116, and since the replacement of ICAO Doc 9705 with Doc 9880 was suspended pending further review, the removal of the layer-detailed requirements will be considered at a later revision.

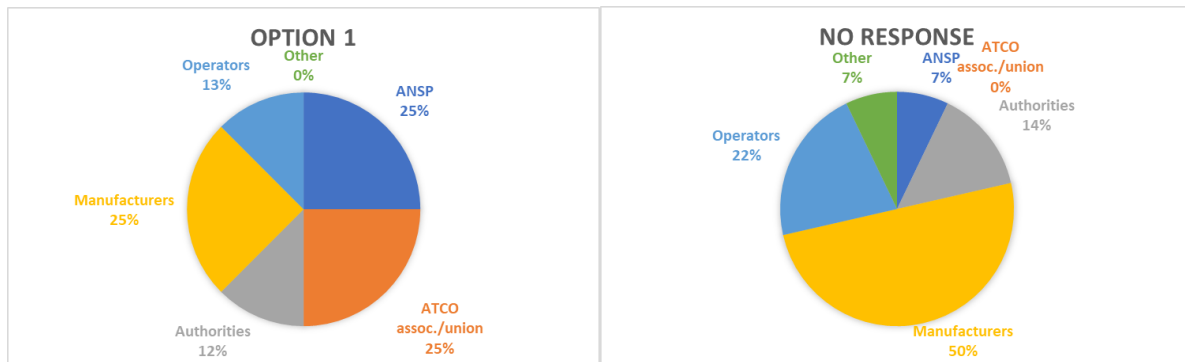
5. Elements to quantify the economic impact of Option 1 or Option 2, or propose other options: EASA invited stakeholders to provide feedback on the economic impact. The feedback received was rather mixed, with one stakeholder stating that Option 2 will be far more expensive than Option 1, while others challenged that there is no evidence that Option 1 will cost less than Option 2. Feedback from another stakeholder proposed the introduction of forward-fit requirements and potentially retrofit requirements. Such proposed implementation objectives cannot be implemented at CS-ACNS or other detailed specification (DS) level. Changes at implementing regulation level are needed to introduce such forward-fit and/or retrofit requirements.

6. Feedback on the proposed options: EASA invited stakeholders to provide feedback on the proposed options.

Stakeholders’ feedback on the proposed options is as follows:



1. Summary of the outcome of the consultation



Note: A sector represents that stakeholder's contribution to the overall number of comments received in favour of that option.

A CS-ACNS amendment is addressed mainly to design and production organisations / manufacturers. Although Option 2 remains the long-term goal, it may not be met by most manufacturers within the 31 December 2027 deadline. Furthermore, Option 2 would only bring value to operators if the ground data link system would be in place to deliver those benefits. Concerns were raised that data link ground systems will only be able to gradually support the additional ATS B2 capability through a process which would extend into the 2030s.

As only EPP is mandated through Commission Implementing Regulation (EU) 2021/116, only the ADS-C EPP configuration should be certified. Furthermore, based on the feedback received, even meeting the 31 December 2027 deadline by complying with Option 1 would be quite challenging for some manufacturers.

It should be noted that Option 2 was supported mostly by ANSPs with the support in some cases from national competent authorities responsible for their oversight, as well as three aircraft operators and others. The commentors' rationale to request/prefer that option is detailed in Chapter 2 of CRD 2023-07. While the support for Option 2 was detailed and substantiated by ANSPs and operators, manufacturers of most aircraft types/models would not be able to meet the deadline if Option 2 is implemented.

On the other hand, Option 1 was viewed as a step in the right direction by various stakeholders, including manufacturers and in particular an operator association, which highlighted that manufacturers and operators would have the possibility to voluntarily complement ADS-C EPP with additional data link capabilities extending beyond the minimum ADS-C EPP.

Taking into account the feedback received in support of Option 2, and duly considering the concerns raised by manufacturers, EASA added GM2 ACNS.B.DLS.001 to clearly state it will support applicants that may voluntarily choose to add more ATS B2 capabilities beyond the ADS-C EPP minimum requirements.



2. Individual comments and responses

In responding to the comments, the following terminology is applied to attest EASA’s position:

- (a) **Accepted** — EASA agrees with the comment and any proposed change is incorporated into the text.
- (b) **Partially accepted** — EASA either partially agrees with the comment or agrees with it but the proposed change is partially incorporated into the text.
- (c) **Noted** — EASA acknowledges the comment, but no change to the text is considered necessary.
- (d) **Not accepted** — EASA does not agree with the comment or proposed change.

(General Comments)	-
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comment	16	LBA has no comments.	comment by: <i>DE-LBA</i>
response	Noted		

comment	17	<p>1. Agree 2) Neutral 3) Disagree 4) Neutral 5) Neutral 6) Disagree 7) do as little as possible/needed as the costs cannot be justified (insufficient benefits). And wait for ICAO/FAA fielding ATN/IPS that is a much better (more promising and safer) Data-Link solution. Europe must re-join this ATN/IPS effort as quickly as possible (short transition). With this, we will reach a high level of harmonisation and standardization world-wide. the present proposed DLS solution here is very Euro-centric, not fully harmonized and not bringing the needed safety and capacity benefits to justify such expenses....</p> <p>next steps will have to be move to a global Satellite solution.</p>	comment by: <i>IFATCA</i>
response	Noted		

comment	24		comment by: <i>ENAIRE</i>
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Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
1	Executive summary	As this proposal provides only the minimum changes required, it is expected that it will be followed by an additional regulatory effort to address the remaining and future data link connectivity challenges in line with the vision expressed in the 'Future Connectivity for Aviation – ' white paper.	As this proposal provides only the minimum changes required, it is expected that it will be followed by an additional regulatory effort to address the remaining and future data link connectivity challenges always ensuring backwards compatibility and avoiding the use of proprietary technologies. in line with the vision expressed in the 'Future Connectivity for Aviation – FCAV' white paper.	The mentioned document does not gather the opinion of all the data link relevant stakeholders. It was developed without any kind of consultation to the ANSPs, SESAR Deployment Manager or the Network Manager who have an extremely important role in the current and future implementation of data link in Europe.

response

Noted

FCAV proposes a common vision for the future aviation connectivity landscape and proposes a transition road map.

Although the FCAV paper was referenced in the NPA, its reference was used within the explanatory note and not in the proposed regulatory text. As data link system installation and data link implementation are complex and were the subject of numerous and sometimes divergent discussions, the FCAV paper was intended to start with an agreement in a smaller group of stakeholders and secure their engagement. Even if such common ground was found, the intent of FCAV is to support a wider consultation of the affected stakeholders.

comment

25

comment by: ENAIRE

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
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1	Executive summary	The subsequent regulatory effort may be captured by various 'regular update' rulemaking tasks or by the RMT.0682 on 'Implementation of the regulatory needs in support of the SESAR deployment	The subsequent regulatory effort may be captured by various 'regular update' rulemaking tasks, e.g., RMT.0524, or by the RMT.0682 on 'Implementation of the regulatory needs in support of the SESAR deployment	<p>ENAIRE considers that RMT.0524 is the appropriate RMT/RMG to take care of current and future modifications on data link.</p> <p>For the time being there is no specific Subtask, according to the information already available within the EPAS (European Plan for Aviation Safety), that explains where the new regulation for data link will be addressed.</p>
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response Noted

RMT.0524 is planned to be closed. Future DLS activities will be undertaken in accordance with the current and future editions of the European Plan for Aviation Safety (EPAS).

At this time, it is foreseen that the DLS rulemaking activity may be captured within RMT.0682 on 'Implementation of the regulatory needs in support of SESAR deployment' or within various regular update rulemaking tasks.

comment 26

comment by: ENAIRE

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
1	Affected stakeholders	Design organisation approval (DOA) holders, production organisations, aircraft operators.	Design organisation approval (DOA) holders, production organisations, aircraft operators, and, to some	The current NPA indicates in section 2.2: "The airspace usage requirements relevant for data link systems equipage are provided in Commission Regulation (EC) No 29/20098 on data



			<p>extent, Air Navigation Service Providers (ANSPs).</p>	<p>link services (the ‘DLS IR’). It should be noted that Opinion No 01/20239 on conformity assessment of ATM/ANS systems and constituents, <i>proposes to repeal the DLS IR and supersede it with provisions in the new regulation...</i></p> <p>This will impact not only on aircraft operators but also on ANSPs who have made a significant endeavour during the last decade to undertake the required investments for the provision of data link services in Europe.</p> <p>Additionally, it is also important to acknowledge and consider that any new regulation shall ensure backwards compatibility and avoid the use of proprietary solutions that derive into monopolistic situations.</p>
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response

Not accepted

In general, the stakeholders directly impacted by the amendments to CS-ACNS are design and production organisations (manufacturers). Aircraft operators would be the next affected stakeholder.

While ANSPs would likewise be affected, the focus would be nevertheless on the directly impacted stakeholders.

With regard to the second point, it should be noted that the detailed specifications for data link (DL) ground equipment DS-GE.CER/DEC Issue 1, includes the backwards compatibility standard to support current ATN B1 aircraft fleet.



comment 41 comment by: *Civil Aviation Authority the Netherlands*
The Netherlands civil aviation authorities do not have comments to this NPA.

response Noted

comment 62 comment by: *ANA Quality Assurance Dept.*
It should be needed that ensuring sufficient lead time or addressing the appropriate grace period in order to ensure operator can complete the related modifications by 31st December 2027.
In addition, in order to ensure that manufacturers can supply the equipment to the aircraft certified on or after 31 December 2027, specific requirements should be presented as soon as possible so that manufacturers can secure a sufficient development period.

response Noted

comment 65 comment by: *A4E*

- A4E recognizes that the CS-ACNS amendment is following strictly the requirements from the CIR 2021-116 (CP1). We are currently in internal discussions whether we would like to see a full ATS B2 requirement or ATN B1 plus ADS-C EPP is sufficient now. Rational: ADS-C EPP in our opinion is an enabler for full TBO. The CS-ACNS in the proposed form would require a full ATS B2 update at a later stage. On the other hand, the full ATS B2 requirement could risk a passing of the Industrialization target date and we see some benefits in ADS-C EPP only, so that we could also support the two-step approach.
- The text in the NPA, not the CS-ACNS itself mentions several times the EU/US Task Force Future Connectivity for Aviation White Paper. From our perspective, the white paper does not reflect European Research and Development activities out of the S3JU PJ.14 program sufficiently. LDACS for instance seems to be a quite promising solution, not only with regards to datalink communication, but also integrated CNS with voice comm, Navigation and potentially surveillance. We should not miss such a technological opportunity. Please take in future regulatory activities the European Solutions of Multilink into account.

response Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1. If additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level.

EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities beyond ADS-C EPP minimum requirements. See GM2 ACNS.B.DLS.001. Furthermore, EASA will also support applicants that use ED-228/ED-229 or later revisions of acceptable standards.



Second point on FCAV is also noted. Please, see the response to comment #24.

comment	<p>66 comment by: <i>Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)</i></p> <p>General Dear Madam/Sir, The Swedish Transport Agency appreciate the opportunity to comment on this NPA. We support this proposed change with no further comments.</p>
response	Noted

comment	<p>68 comment by: <i>Isavia ANS</i></p> <p>Isavia ANS wishes to express the following concerns with the Notice of Proposed Amendment (NPA) 2023-07 regarding data link services.</p> <p>The future Air-Ground data link standard, ATS Baseline 2 Rev B as documented in Eurocae ED-228B and ED-229B, will be published in 2023. This will be supported by a corresponding update to the ICAO Global Operational Data Link (GOLD) Manual (ICAO Doc 10037). It is expected that ATS Baseline 2 Rev B will become the global standard air-ground data link application for the future.</p> <p>ATS Baseline 2 (B2) introduction is on the ICAO North Atlantic Region Vision schedule for the period 2026 – 2031.</p> <p>NPA 2023-07 mandates only the EPP (Extended Projected Profile) part of B2 ADS-C instead of a full ATS B2 Rev B package. The risk is that major aircraft manufacturers will only implement the minimum required capabilities resulting in fragmented airborne implementation with many possible data link combinations. Any such implementation may delay the global implementation of ATS B2 Rev B and hamper the drive towards globally harmonized air-ground data link. It is unlikely that air navigation service providers outside Europe will be able to support the data link configuration proposed by NPA 2023-07.</p> <p>It should be kept in mind that ATS B2 Rev B is a key enabler in the development of Trajectory Based Operations (TBO) and includes many new features that are essential for the safety and efficiency of air traffic services globally in the future. It is essential that the development of ATS B2 Rev B by aircraft manufacturers is not delayed in any way.</p> <p>Isavia ANS urges EASA to carefully weigh the NPA's effect on the global aviation community and coordinate this matter with the relevant international stakeholders (including the ICAO North Atlantic Region) before a final decision is taken.</p>
response	<p>Noted</p> <p>This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1. If additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at</p>



implementing regulation level. Subsequent updates of the applicable regulatory package should be done in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).

EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities beyond ADS-C EPP minimum requirements. Please, see GM2 ACNS.B.DLS.001.

Furthermore, EASA will also accept and support applications that use ED-228A/ED-229A or later acceptable standards revisions.

comment

69

comment by: *Air France*

As a summary of comments provided in this NPA, AFR:

- Reminds its support to ADS-C EPP and TBO
- Supports Full ATS B2 (option 2) to meet ADS-C EPP CP1 requirement, in accordance with approved standard ED 228A. ATS B2 equivalent to FANS 1/A already in use in US NAS & Oceanic airspaces.
- Raises concerns about interim standards with only ADS-C EPP (option 1):
 - Reduced cost not demonstrated, but higher total cost expected (future retrofits)
 - Operational adverse effects highly probable with interim standards, causing new fragmentation between fleets and possible flight safety risk (no FMS upload of clearances)
 - Time, costs, and difficulties to implement and homogenize to full B2 later
 - Other ATS B2 applications needed (CPDLC V2, DCL)
- Proposes a transition period on aircraft for which manufacturer reports timing difficulties to Full ATS B2 certification, based on compromise found for GADSS ADT. While securing ADS-C EPP airborne equipage rate, this would allow the synchronized ground/board deployment of a robust and stable solution, in line with CP1 objectives
- Proposes to remove references to FCAV white paper, without prior consultation and approval from EU ATM stakeholders

response

Noted

The CS-ACNS scope is limited to provide certification specifications for airborne communications, navigation and surveillance (CNS). An implementation transition period needs to be added at the right level of documentation (e.g. implementing regulations). Any subsequent regulatory changes should be done in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).

Please, see the responses to comments #68 and #24.

comment

89

comment by: *Henrik Svedberg*

General comments:



	<p>- Not the best timing to send out a proposed amendment in the middle of the summer with a tight deadline! In the summer we the most traffic and most ATCO's are stuck in the Ops.</p> <p>- I think you should go for CPDLCv4 and ADS-C v3 (full RevB), since it is only forward-fit. /Henrik</p>
response	<p>Noted</p> <p>The public consultation was nonetheless extended, based on the request received.</p> <p>Please, see the response to comment #68.</p>
comment	<p>107 comment by: <i>Lufthansa Group</i></p> <p>In general, Lufthansa Group (LHG) would like to leave technical comments to the integrators who will have to implement ADS-C EPP and potential other functionalities according to the updated version of the CS-ACNS, e.g. airframe and avionics manufacturers.</p> <p>However, from the operational perspective, LHG would like to provide some general comments, see sections below.</p>
response	<p>Noted</p>
comment	<p>112 comment by: <i>EUROCONTROL</i></p> <p>ICAO Doc 9705 is replaced with ICAO Doc 9880 (Second Edition) throughout. However, Doc 9880 has known defects and omissions, most notably :</p> <p>Many CPDLC provisions in Doc 9705 have moved to ED-229A and are not in Doc 9880 CPDLC V1 message syntax is missing entirely Doc 9880 includes upper layer naming extensions that are not part of ATN B1 A group has been established in ICAO to update Doc 9880.</p> <p><u>Note on replacement of obsolete ICAO Doc 9705 with ICAO Doc 9880</u> ATN B1 functionality can be specified as a profile of ICAO Doc 9880 (second edition) augmented by:</p> <ul style="list-style-type: none"> • Specification of ASN.1 Module CPDLCMessageSetVersion1 • The following interoperability requirements from EUROCAE Document ED-229A, with B2 message elements replaced with their B1 equivalents (by omitting "R" suffix): CPC-IR 02, 04, 11, 14 – 25, 27 – 32, 46 – 61, 64 – 76, 78 – 111 and ACM-IR 1 & 2. • Definitions from ICAO Doc 9694 Part IV sections 3.6 – 3.15, 3.17 – 3.25, 3.33, 3.36, 3.40 – 3.42 and 4.10. • Provisions from ICAO Doc 4444 section 14.3.2 and Appendix 5. <p>And corrected by:</p> <ul style="list-style-type: none"> • Deleting the <app-type> (k) arc from AP and AE titles, and reinstating AEQ as the final arc of the Application Entity Title, identifying the application type. <p>Doc 9705 cross-references in ED-110B deemed to refer to ICAO Doc 9880.</p>



response	<p>The above provisions could be incorporated into a profile specification, which would also specify required elements of service and exclude services such as CM Update, Downstream Clearance and CPDLC Forward, which are outside the B1 scope.</p> <p>Noted</p> <p>Based on the feedback received from stakeholders, the current revision of ICAO Doc 9880 does not consistently and completely replace the provisions of ICAO Doc 9705.</p> <p>Therefore, where still needed, the references to ICAO Doc 9705 have been kept unchanged.</p>
comment	<p>113 comment by: EUROCONTROL</p> <p>References are made to rev A of EUROCAE documents ED-228 and ED-229. Rev B is expected to be published within the timescale of CS-ACNS finalisation, with significant improvements compared to RevB. How is this going to be addressed and RevB incorporated?</p>
response	<p>Noted</p> <p>EASA will support applicants that may voluntarily choose to add ATS B2 capabilities beyond the ADS-C EPP minimum requirements stated in CP1. Please, see GM2 ACNS.B.DLS.001.</p> <p>Furthermore, EASA will also support applicants that use ED-228A/ED-229A or later acceptable standards revisions.</p> <p>Any subsequent regulatory changes should be done in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).</p> <p>Please, see the response to comment #68.</p>
comment	<p>114 comment by: EUROCONTROL</p> <p>References to ARINC 631-6 should be updated to ARINC 631-7 throughout. (For ATN B1 the accepted baseline was ARINC-631-6, and there will be many systems currently operating that were designed around this earlier standard. Supp 7 mainly incorporates clarifications, but does include some new functionality (e.g. appending Channel Utilisation to downlink RR frames) that currently may not be widely implemented.)</p>
response	<p>Not accepted</p> <p>CS-ACNS provides the minimum specifications needed. Since ARINC 631-6 is considered the minimum acceptable standard, it is therefore referenced in CS-ACNS.</p> <p>Applicants may use a later standard pending the DL system installation approval.</p>
comment	<p>155 comment by: EUROCONTROL</p> <p>“Alternative proposal:</p>



In case of time concerns the new regulation could apply similar temporary exemptions to the implementing rule as the Commission Implementing Decision (EU) 2019/2012 which introduced exemptions from the Datalink Service Implementing Regulation for certain airframes for an additional 2 year period. It is more desirable for ANSPs globally to have as few variations in equipment as possible even at the cost of a later implementation/temporary exemptions. It would also be in the interests of all airspace users through the better planning capability and possibly higher capacity increases of the ANSPs due to a more consistent set of airborne equipage.

As the mandate is forward-fit only, it fundamentally differs from the DLS IR.

Acceptable means of compliance proposal:

Between January 2028 – January 2030:

-full RevA (ADSC v1 + CPDLC v2) is acceptable for forward-fit

-exemption for airframes equipped with CPDLC v1 until January 2030

After January 2030:

-full RevB (ADSC v3 + CPDLC v4) acceptable only for forward-fit

-no exemptions on forward-fit (not even general aviation)

Ground: full B2 RevB implementation, which is fully backwards compatible with ATN B1 and B2 RevA as per ED-231B.”

“The proposal’s preferred option (1) would benefit from more appreciation to the medium-to-long term global effects of the change. The proposal’s effect on the global aviation community should be carefully weighed before a final decision is taken.

The objective of ensuring the highest common level of safety protection for EU citizens should not be overruled by development cost concerns. The proposal to keep ATN B1 CPDLC as acceptable for a future regulation without any time limitations, while there is a safer and better performing version already in operation, might not ensure the highest levels of safety.

The proposal to partially implement ADS-C might also somehow contradicts the European objectives linked to the Green Deal, due to the lack of ADS-C functionalities which are necessary to provide the most environmentally friendly flight profile for airspace users. Partial ADS-C implementation and usage would also reduce the full ATS B2 implementers’ benefits to a considerably lower level; it would need to be explored how this would affect net emissions and fuel consumption associated costs.

Fragmented implementation will lead to ATCOs humanly not being able to differentiate between the many possible equipment combinations and the associated diverse possibilities to keep aircraft on their most efficient trajectory.

It is unknown whether the ADS-C EPP only equipped aircraft could bring enough benefits to outweigh the lost benefits caused by a lower level of service by ANSPs due the fragmented approach. In moderate to high traffic scenarios ATCOs would have to provide the same, “EPP-only” level service to all aircraft, regardless of equipage level (full or partial).

International aviation stakeholders will be impacted if the decision is made to implement option 1 (ADS-C EPP only+CPDLC B1), limiting their plans to implement ATS B2 in the rest of the world.



response	<p>The impact of a fragmented implementation was not foreseen when the ATS B2 standard was written and provides no guarantee that this “partial implementation” would perform as expected in terms of compatibility.</p> <p>“</p> <p>Not accepted</p> <p>The introduction of implementation dates as recommended in the comment cannot be accomplished at CS-ACNS or detailed specification (DS) level. If additional DL functionalities are needed to be mandated to support certain types of operations, such need should be reflected at implementing regulation level.</p> <p>This amendment to CS-ACNS (Issue 5) reflects the minimum design specifications for the DL airborne installation that is needed to support compliance with CP1. Furthermore, it is applicable to those applicants that intend to install ADS-C EPP.</p> <p>Nonetheless, recognising the need to evolve to ATS B2, EASA will support applicants that may voluntarily choose to add ATS B2 capabilities, going beyond the minimum ADS-C EPP requirements.</p> <p>Please, see the response to comment #68.</p>
comment	<p>192 comment by: <i>Air Traffic Control the Netherlands</i></p> <p>General</p> <p>The proposed amendment specifies the minimum requirements for aircraft manufacturers to comply with the CP1/AF6 regulation. The proposal limits the implementation of EPP only to ADS-C instead of mandating the full RevB ATS B2. This limitation will, to our opinion, constitute a major setback in our endeavors to implement TBO in The Netherlands and therefore hinders the development of more flight and environmentally efficient operations with increased safety.</p> <p>Limiting EPP to ADS-C only, will result in a myriad of implementations with aircraft having different capabilities. This will not only lead to difficulties for and limitations of operational use, but also introduce vast technical implementation complications, further hindering the progress of TBO developments, increasing costs and reducing benefits promised to airlines of their investments.</p> <p>Furthermore, for LVNL, the operational core of the TBO concept in The Netherlands lies in the integrated nature of CPDLC uplink. This will not be possible with the proposal implemented, resulting in very limited application of the concept, more emissions and noise hindrance. Capacity is then more than likely to be limited.</p> <p>At the same time, the technical core of TBO is the robust data that is sent by the aircraft to ATC. This consists of several packages of information. A key new package, EPP will contain the 4D trajectory information and is therefore essential for TBO. However, the only truly feasible channel through which the essential information can be obtained is by means of the Common ADS-C Server (CAS, also referred to as ACS). This is being developed under the umbrella of</p>



SESAR and currently in prototype stage. The CAS is based on full implementation of ADS-C, not just EPP.

Also, ground capacity is one of the key issues at Schiphol. The new CPDLC standard brings facilities that can be utilized to lower ground control workload, but will be lost if the proposal is accepted.

To summarize

The NPA2023-07 would severely hamper implementation of TBO, the implementation of the results of the SESAR/SJU and delay the projected benefits of TBO and the SESAR initiative by decades on a global scale. Essentially, this proposal would lead to a repeat of history when CPLDC was first implemented with unexpected high cost and limited benefits.

LVNL therefore only sees a way forward by continuing the existing mandate with the inclusion of RevB ATS B2. If this will implicate insurmountable implementation problems in terms of timeline and/or cost, some carefully chosen exemptions can be defined that will not go the detriment of the large scale benefit of the major traffic streams management in Europe.

response

Noted

CS-ACNS only provides the minimum DL capability specifications needed to support compliance with CP1.

If additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level.

Nonetheless, recognising the need to evolve to ATS B2, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities or consider later ED-228/ED-229 acceptable standards revisions (Rev B). Please, see GM2 ACNS.B.DLS.001.

Please, see the response to comment #65.

comment

204

comment by: *General Aviation Manufacturers Association / Hennig*

Attachment [#1](#)

The General Aviation Manufacturers Association (GAMA) appreciates the work of the agency to advance a timely proposal to provide clarity about the requirements to support the December 31, 2027 mandate for new aeroplane equipage or upgrades to support the Commission Regulation (EU) 2021/116 Common Project (CP1) requirements, specifically as encapsulated in AF6 for airborne equipage.

GAMA did review with interest the Executive Summary statement of the NPA which already now introduces the expected follow-on consultation to advance a notional 2032 additional airborne avionics upgrade to support the full services identified in the joint EASA/FAA/Airbus/Boeing Future Connectivity for Aviation (FCAV) white paper.

While the overall data communication strategy is separate from the consultation about the technical amendment to CS-ACNS, it is important that the Industrialisation Forum's work



activity appreciates the implications on industry from a “two step” upgrade to over 40 different aeroplane models within the business and general aviation industry’s in-production fleet – not only to support 2027, but also the envisioned 2032 second change to airborne equipage (i.e., an estimated 70-90 individual certification projects over a period of less than a decade). Additionally, based on past experience, concerns remain about the readiness of the standards for airborne equipage and the commitment of ground ANSPs to deploy.

In order to develop a good Extended Projected Profile (EPP) solution for an aeroplane, an avionics supplier would have to develop an updated FMS solution around the Required Time of Arrival (RTA) algorithms. The preferred and cost-effective path would be for a single upgrade as opposed to several.

As noted by a larger jet OEM:

“There are significant challenges for all our affected products to meet the current date for the mandate [i.e., 31 December 2027], particularly if relief, such as make/model exemptions or class, are not considered. Current and past datalink projects in Europe and elsewhere have shown to be extremely challenging in the transition from general requirements to properly tested, certified, and useable systems in the field. [The OEM...] are highly skeptical that... standards and overall implementation readiness are on target for 2028.”

Further, GAMA members note that *“the new common ground system architecture for the ADS-C... needs to be understood to make sure... avionics architecture is able to correctly interoperate.”*

GAMA has previously shared with the agency the attached white paper to help inform the overall strategy for ADS-C EPP per AF6 and the Industrialisation Readiness decision. The white paper is provided as an attachment as part of comments to NPA 2023-07 Datalink services to provide context about our comments.

response

Noted

It is understood that a single upgrade to ATS B2 would be more cost-effective; however, the timing to accommodate such upgrade (target ATS B2) would not support the timeframe defined in CP1.

EASA was nonetheless required to issue an amendment to CS-ACNS to support compliance with CP1. CS-ACNS Issue 5 reflects the minimum design requirements to support compliance with CP1.

comment

219

comment by: *Boeing*

September 7, 2023

W-ESMC-REG-23-MT-37

Note to file:



response	<p>The attached comprise comments from The Boeing Company submitted to EASA via the Comment Response Tool (CRT) in response to EASA NPA 2023-07 Datalink services.</p> <p>Sincerely, Mildred Troegeler Director, Global Regulatory Strategy</p>
comment	<p>239 comment by: <i>Airbus-Regulations-SRg</i></p> <p>Airbus Commercial Aircraft is pleased to participate in the commentary on NPA 2023-07 Datalink services Our experts and matter specialists have carefully reviewed the proposals made. Our comments are added to the dedicated sections of the NPA.</p> <p>In case any question my occur please contact us at regulations.policies@airbus.com for further internal coordination. Thank you.</p> <p><u>Administrative notes :</u> Airbus Documents Classification : not applicable Airbus Export Control Classification: Not technical</p>
response	Noted
comment	<p>254 comment by: <i>EASA Focal Point for AustroControl ANSP-issues</i></p> <p>General Reservation against the scope of this published NPA, filed by Austro Control:</p> <p>By having reviewed the published NPA 2023-07, although it is intended to adress only AU's and Manufacturing Organisations, Austro Control expresses severe concerns against the chosen way of NPA2023-07, specifically mandating only ATN B1 CPDLC + only the EPP (Extended projected profile – downlinked FMS flight plan) part of ADS-C, instead of a full B2 package.</p> <p>Various bad examples in the past had shown, that stakeholders implement equipment only to the extent, they are mandated by regulations. The fact of issuing AMC's and GM's, which tackle only sub-functionalities of the desired Trajectory Based Operations (TBO) package – which by the way, had been long ago identified as THE(!) enabler for the foreseen 3-fold increase in airspace capacity under SES – will end up in a fragmented equipage scene.</p> <p>A fragmented equipage scene not only blocks by itself reaching SES goals and CBA benefits, it also creates additional workload on ANSPs.</p>



	<p>ATCO's will face additional workload, since there are no flight plan designators and logon indications for "partial ADS-C capability" as "EPP-only": Aircraft can only declare full ADS-C capability upon logon, therefore lists would need to be maintained to know which aircraft is capable of what.</p> <p>Due to the possible amount of equipage combinations, strategic capacity planning will become very difficult, as it will never be certain, how many full (CPDLC v2+ADS-C v1[Revision A], CPDLC v4+ADS-C v3[Revision B]) or partial implementations (EPP only) will be crossing the airspace – all with different capabilities to handle messages or do TBO. TBO will be limited, as a good part of the instructions might have to be given via voice instead of CPDLC, while voice channels both congested and also not suitable to pass long clearances with many numbers/parameters.</p> <p>Considering actual high growth traffic forecasts, ANSP's will be doubtlessly forced to compensate missing AGDL functionalities by additional ATCOs.</p> <p>Austro Control highly recommends to stop the ongoing NPA process and bring the consultation process back to the foreseen consultation bodies, like the "Joint CNS stakeholder consultation platform" – which initially had been installed to overcome fragmented scenarios like this one.</p>
response	<p>Noted</p> <p>EASA is required to issue documentation to support CP1 implementation. CS-ACNS only provides the minimum DL capability requirements needed to support compliance with CP1. If additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level (i.e. CP1).</p> <p>Nonetheless, recognising the need to evolve to ATS B2, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities beyond the ADS-C EPP requirements stated in CP1. Please, see GM2 ACNS.B.DLS.001.</p> <p>Furthermore, EASA will also support applicants that use ED-228A/ED-229A or later acceptable standards revisions.</p> <p>Please, see the response for comment #68.</p>
comment	<p>255 comment by: NATS</p> <p><i>In general NATS are very supportive of the fact that this CS-ACNS should be updated in the ways described by the NPA to properly address the needs for avionics certification to meet CP1 AF6 needs in due time.</i></p>
response	<p>Noted</p>
comment	<p>256 comment by: NATS</p>



Although this NPA provides for the required airborne implementation to cover the specific needs of CP1 AF6 only, it is clear that ANSPs and airspace users recognize that a large part of the overall benefit to be gained from using ADS-C lies beyond just the implementation of EPP. NATS urge EASA to consider how the provision of 'full ATS-B2' including ADS-C capability in full and CPDLC V2 can be included ASAP as part of regulation around Datalink.

OEP 12.2 (early ATS B2 deployment) work in 21-22, included discussion on 3 possible scenarios, which were:

Scenario 'do nothing', i.e. no specifications for any ATS B2 deployment

Scenario 'EPP only', i.e. draft specifications only for ADS-C/EPP part of ATS B2 (as requested by CP1)

Scenario 'extended ATS-B2 deployment'

After discussions (involving all stakeholders), Scenario 2 was chosen to secure the CP1/AF6 Industrialization Gate, but it was also decided to start working on Scenario 3 'full ATS B2' as soon as the CP1/AF6 industrialization gate will be over. This decision was presented and validated by NDTECH/6 in March 22.

The on-going work in OEP 12.2 must be coordinated with EASA, and a route must be planned for outputs from this group in the near future to be included as part of CS-ACNS, and future DLS IR iterations as appropriate to ensure that from end of 2027 onwards, the baseline for ATS-B2 on the airborne and ground side can be as beneficial as possible.

Without this proactive work, the benefits of ATS-B2, and progression from i4D to a full 4D system will be delayed by many years, possibly a decade. A large proportion of airframes flying in Europe will already be capable of more than just providing EPP, but this will be in a fragmented environment which will not allow ANSPs to develop future TBO concepts with any confidence of compatibility with majority of airspace users.

NATS would like to see EASA produce plan to provide a home in appropriate regulation for output from on-going ATS-B2 OEP 12.2 work

response

Noted

It is understood that the benefits to be gained through ADS-C require more than the ADS-C EPP functionality. CS-ACNS only provides the minimum DL capability requirements needed to support compliance with CP1. If additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level (i.e. CP1).

EASA recognises that operational benefits can be achieved on a pan-European basis through the effective use of downlinked aircraft data and the use of an expanded list of CPDLC messages.

A work programme to review and amend the regulatory package, where applicable, could be established; however, this needs to be done in accordance with current and future editions of the European Plan for Aviation Safety (EPAS).



comment

258

comment by: NATS

Whilst the EPP data group is indeed an important component of ADS-C data, SESAR-funded research to date has included, and produced promising results for, the application of data items from several other data groups, including:

Mass, for ground trajectory prediction improvement,

Speed schedule, for ground trajectory prediction improvement,

TOA Range, for input to AMAN for optimising arrival management interventions,

FMS Planned approach speed, for improved approach spacing compression prediction, leading to increased landing rate,

FMS runway occupancy time, for improved approach spacing prediction, leading to increased landing rate.

A significant portion (potentially the majority) of ADS-C – related benefits identified by SESAR research come from these additional (non-EPP) data groups. NATS anticipates an incremental implementation of the use of ADS-C data in ATC processes, beyond the use of EPP data, but this is dependent on this additional data being available from airframes.

The omission of these data groups from the CS-ACNS will have a significant impact on the benefits that can be realised from the deployment of ADS-C in ATM.

We would request that consideration made for the inclusion of the full ADS-C v1 specification in the CS-ACNS.

response

Noted

EASA is required to issue DL installation certification specifications to support CP1 implementation. This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1.

While it is understood that significant ADS-C benefits result from the introduction and use of data complementing the minimum required ADS-C EPP, if additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at the right level of documentation (e.g. implementing regulation level).

While ADS-C Version 1 is used to support compliance with CP1 (see GM1 ACNS.B.DLS.001 *Applicability*), ADS-C EPP data is required to be downlinked as a minimum.

comment

259

comment by: NATS

Whilst it is not planned to implement this additional ADS-C data (beyond EPP) *by 2027*, it is anticipated to be required well within the typical operational lifespan of a commercial aircraft.

The CP1 mandate in its current form (forward-fit from 2028) will mean that it will be several years before CP1-mandated capability is present on a majority of aircraft operating in Europe. Omission of the additional data groups (beyond EPP) from the CS-ACNS will further delay the realisation of benefits of ADS-C data application.

If the full ADS-C v1 scope and CPDLC v2 scope is not mandated until a later date (e.g. 2032 as referenced in the Future Connectivity for Aviation – ‘FCAV’ whitepaper



	<p>https://www.easa.europa.eu/en/downloads/137252/en), it is strongly recommended that this subsequent mandate includes a <u>retrofit</u> clause for post-2027-registered airframes.</p>
response	<p>Noted</p> <p>CS-ACNS only provides the minimum DL capability requirements needed to support compliance with CP1.</p> <p>If additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level (i.e. CP1).</p> <p>Nonetheless, recognising the need to evolve to ATS B2, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities or consider ED-228A/ED-229A or later acceptable standards revisions (e.g. Rev B). Please, see GM2 ACNS.B.DLS.001.</p> <p>A retrofit provision cannot be introduced via CS-ACNS, as such action would require changes at implementing regulation level.</p>
comment	<p>275 comment by: <i>SESAR 3 JU</i></p> <p>In the executive summary, the reference to the 'Future Connectivity for Aviation' (FCAV White Paper) should be removed.</p> <p>Any reference should be to be the European ATM Master Plan (ATM MP) update.</p>
response	<p>Partially agree</p> <p>The ATM Master Plan should be consistent with the regulatory activities as reflected in the European Plan for Aviation Safety (EPAS).</p> <p>Please, see the response to comment #24.</p>
comment	<p>278 comment by: <i>Gulfstream Aerospace Corporation</i></p> <p>Gulfstream Aerospace Corporation:</p> <p>Comment: Industry needs a clear path for the subsequent regulatory effort required to provide ADS-C EPP and the overall ATS Mandate.</p> <p>Rationale: Regular updates of the RMT.0682 may not drive crucial changes to the implementation and to the means of compliance.</p> <p>Recommended Change: EASA should consider the timeline to driving crucial change.</p>
response	<p>Noted</p>



This amendment to CS-ACNS (Issue 5) provides the minimum changes to support compliance with CP1. Any subsequent regulatory changes will be done in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).

At this time, it is foreseen that rulemaking activity on DLS may be captured within RMT.0682 ‘Implementation of the regulatory needs of the Single European Sky ATM Research (SESAR) common projects’ or various regular update rulemaking tasks. RMT.0682 is not intended to be used for regular updates, but rather for regulatory needs as regards the SESAR deployment. A subtask may be created under RMT.0682 to address various data link issues.

1.3. The next steps

comment

27

comment by: *ENAIRE*

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
6	1.3 The next steps	Subsequent regulatory action may be needed to address the connectivity challenges in line with the common vision proposed by the white paper on the ‘Future connectivity for aviation’6.	in line with the common vision proposed by the white paper on the ‘Future connectivity for aviation’6.	The mentioned document does not gather the opinion of all the data link relevant stakeholders. It was developed without any kind of consultation to the ANSPs, SESAR Deployment Manager or the Network Manager who have an extremely important role in the current and future implementation of data link in Europe.

response

Noted

Please, see the response to comment #24.

comment

43

comment by: *Air France*

FCAV White Paper should neither be referenced in this NPA, nor used to support CS-ACNS evolution.

FCAV white paper has been acknowledged only between EASA, FAA and two aircraft manufacturers, without consultation of all other ATM/CNS stakeholders:



response	<ul style="list-style-type: none"> • Airlines and their associations • EU ATM stakeholders (SJU, SDM, ETCL) • Communication Service Providers • ANSP • Other aircraft and avionic manufacturers <p>Proposed text: “additional regulatory efforts linked to expected/requested COM evolutions should be needed”</p> <p>Noted</p> <p>Please, see the response to comment #24.</p>
comment	<p>276 comment by: <i>SESAR 3 JU</i></p> <p>The following text should be removed or should refer to the European ATM MP update rather than the FCAV White Paper: Subsequent regulatory action may be needed to address the connectivity challenges in line with the common vision proposed by the white paper on the 'Future connectivity for aviation'</p> <p>In addition, the footnote link number 6 should be removed or updated to refer to the European ATM MP update. https://www.easa.europa.eu/en/document-library/general-publications/future-connectivity-aviation</p>
response	<p>Noted</p> <p>Please, see the response to comment #24.</p>
comment	<p>279 comment by: <i>Gulfstream Aerospace Corporation</i></p> <p>Gulfstream Aerospace Corporation:</p> <p>Comment: The 'Future connectivity for aviation' represents a forecast for the time horizon 2030-2035 in contrast to this NPA targeting aircraft certified on or after 31 December 2027.</p> <p>Rationale: Gulfstream expects that the acceptable means of compliance described here fully aligns with the future connectivity roadmap to reduce impact on the aircraft in terms of development, installation, etc. The date established by CP1 leaves little time for DOA holders to change the equipment and aircraft design and incorporate the change in the production line. Subsequent changes introduced by a subsequent regulatory action could invalidate this entire effort.</p> <p>Recommend Change: EASA should consider the timeline to driving crucial change.</p>



response

Noted

CS-ACNS only provides the minimum DL capability requirements needed to support compliance with CP1.

If additional DL capabilities are required to be mandated to support certain types of operations, such need and the associated timelines should be reflected at implementing regulation level (i.e. CP1).

Any subsequent regulatory changes will be done in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).

2.2. Description of the issue

p. 7

comment

44

comment by: *Air France*

CP1 regulation was published on Feb 2021.

We regret late consideration of this requirement at CS-ACNS level.

Time for ATS B2 implementation by aircraft manufacturers should not be a driver for CS-ACNS policy and deployment strategy.

We remind that full ATS B2 capabilities, including ADS-C EPP, have been certified since 2019 on certain aircraft types, in accordance with standards already available. Maturity and harmonization are not questioned, operationally demonstrated by demo campaigns and our daily operations.

The issue is then more implementation dates than standard definition and availability

response

Noted

EASA is required to issue an amendment to CS-ACNS to support compliance with CP1. This amendment provides an element to support fulfilling the CP1 maturity gate requirements.

While CS-ACNS provides the minimum DL capability specifications to support compliance with CP1, this amendment was proposed in conjunction with the corresponding DL detailed specifications (DSs) for ground systems as provided in DS-GE.CER/DEC Issue 1.

comment

268

comment by: *DGAC FR (Mireille Chabroux)*

It is written:

*"AF6 of the CP1 regulation ('AF6 CP1') requires that aircraft operators ensure that aircraft **certified** on or after 31 December 2027 are equipped ..."*

The wording seems incorrect since the requirement does not deal with newly certified aircraft type/model but newly manufactured aircraft.

It is suggested the following wording:



"ensure that aircraft with an individual certificate of airworthiness (CofA) first issued on or after 31 December 2027"

response Accepted

comment 280 comment by: Gulfstream Aerospace Corporation

Gulfstream Aerospace Corporation:

Comment:

How will the ATM functionality 6 or AF6 (i4D) via ATN VHF Mode 2 or SATCOM differ from ADS-B IN (CDI) transmitted via transponder extended squitter ADS-B OUT that could be utilized by tactical air traffic control (ATC) and yet reduce interventions and improve de-conflicting situations?

Rationale:

The data link system should comply with EUROCAE Document ED-228A, Sections 6.1 and 6.2 and EUROCAE ED-229A, Sections 3.2 and 5.3 to support the exchange of EPP" as per the new paragraph CS ACNS.B.DLS.077 pointing the implementation to the ATN solution which is based on VHF Mode 2 and potentially SATCOM.

Recommend Change:

Gulfstream believes that this functionality should be supported by current EUROCAE Doc ED-228A and ED-229A.

response Noted

ADS-C EPP data provided by the aircraft needs to be processed by the ATS providers in accordance with Commission Implementing Regulation (EU) 2021/116. This would require the provision of data and intended routing which is beyond the ADS-B data.

2.1. Why we need to act - issue/rationale

p. 7

comment 156 comment by: EUROCONTROL

Reference 7

The referred link doesn't exist

response Not accepted

Ref. 7 refers to Commission Implementing Regulation (EU) 2021/116 of 1 February 2021 on the establishment of the Common Project One supporting the implementation of the European Air Traffic Management Master Plan provided for in Regulation (EC) No 550/2004



of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014, and was provided on page 7 of the NPA.

comment 260

comment by: ATR

Section 2.3 “Assessment of the issue” states: [QUOTE] *Aircraft operators are affected by the AF6 CP1 requirements when performing general air traffic (GAT) flights in accordance with instrument flight rules (IFR) above FL 285 within the Single European Sky (SES).* [UNQUOTE]

It is thus proposed to clarify the rationale within section 2.1 “Why we need to act — issue/rationale” of the NPA.

The following text is proposed:

[QUOTE] *This NPA addresses the need to timely support the initial trajectory information sharing (i4D) capability required of the operators for affected aircraft **operating above FL 285**, in accordance with the provisions of Commission Regulation (EU) 2021/1167* [UNQUOTE]

response Not accepted

Within the applicable regulatory framework it is already stated that the operations affected are IFR GAT above FL285 within the SES.

2.3. Assessment of the issue

p. 8

comment 28

comment by: ENAIRE

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
8	2.3 Assessment of the issue	While the issue assessed is only the support to operators’ need to comply with AF6 CP1 requirements, the remaining data link issues intended to be addressed by the RMT.0524 could be captured in various ‘regular update’ rulemaking tasks or by the RMT.0682 on ‘Implementation of the regulatory needs in support of the SESAR deployment’.		To our knowledge, RMG.0524 was already dissolved a couple of years ago. Does this statement mean that RMG.0524 will be reactivated to take care of all the relevant aspects around data link service provision



				mentioned in this NPA? Please, clarify.
response	<p>Noted</p> <p>RMT.0524 is not intended to be reactivated. Any subsequent regulatory activities will be undertaken in conjunction with the current or future editions of the European Plan for Aviation Safety (EPAS).</p> <p>Please, see the response to comment #25.</p>			

comment	45	comment by: <i>Air France</i>
	<p>We regret late consideration of this requirement at CS-ACNS level.</p> <p>Time for ATS B2 implementation by aircraft manufacturers should not be a driver for CS-ACNS policy and deployment strategy.</p> <p>We remind that full ATS B2 capabilities, including ADS-C EPP, have been certified since 2019 on certain aircraft types, in accordance with standards already available. Maturity and harmonization are not questioned, operationally demonstrated by demo campaigns and our daily operations.</p>	
response	<p>Noted</p> <p>Please, see the response to comment #44.</p>	

comment	63	comment by: <i>European Business Aviation Association</i>
	<p>Context : <i>Considering the time needed by DOA holders, aircraft, and equipment manufacturers to modify the design and incorporate the changes into the production line to support the forward fit of ADS-C EPP capability, meeting the 31 December 2027 deadline may be challenging and would depend on the aircraft and avionics configurations and on the extent of the design changes needed.</i></p> <p>--> Application of AF6 by end of 2027 to all aircraft remains a challenge.</p> <p>It is especially true for the Business Aviation industry which is producing numerous different aircraft types equipped with a multitude versions of avionics suites. Even if it is not specific to AF6, It will be difficult to not say impossible for the avionics manufacturers to deliver all the TSOd versions on time and this to allow aircraft manufacturers to certify their aircraft on time. Experience of VDL2 deployment has demonstrated the poor level of quality of the standards. Numerous VDL2 issues remain open and without fixes, and fourteen years after EC 29-2009 publication, the rules to connect and autotune the "non-AOC aircraft" have not been defined. AF5 (FF-ICE R1 & R2) deployment is a prerequisite to AF6, recent discussions at NM level have highlighted that AF5 will not be ready in time.</p>	



Difficult in such conditions to consider that avionics manufacturers will be able to deliver free of bugs AF6 avionics.
 Is AF6 Preparing the future? The future is "IP & IPS" not "OSI".
 Is AF6 CBA positive? It's with the deployment of all the ED228 functionalities only that we might expect a positive CBA.
 EBAA aligns with the vision outlined in the "EASA-FAA White Paper on Connectivity." It is imperative that the deployment of this vision be executed on a global scale, encompassing both continental and oceanic regions, with a concerted effort to ensure seamless coordination on both sides of the Atlantic.
 Within the European context, priority should be placed on the establishment and mandated implementation of essential "Centralized Services." This strategic focus is designed to facilitate the use of a comprehensive array of communication links, including VDL2 IP, SatCom B, and cabin links, thereby fostering an integrated and efficient aviation connectivity framework.

response

Noted
 EASA is required to amend CS-ACNS to support compliance with CP1. Such amendment represents the minimum provisions needed to support compliance with CP1. This amendment should be followed by additional regulatory effort in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).
 Please, see the responses to comments #24 and #278.

comment

71 comment by: Collins Aerospace
Note: In our comments, we frequently refer to "Future Connectivity Whitepaper (WP)". It refers to the Future Connectivity for Aviation EU/US Task Force White Paper Issue 1 written by EASA / FAA / Airbus / Boeing and the roadmap 444 page 36 (roadmap fully supported by Collins Aerospace).

Coordination Required with other non-European Regulators: The Future Connectivity WP was clearly showing a coordinated approach with EASA / FAA showing a global roadmap (global implementation covering both the Continental and Oceanic Airspaces). AF6 CP1 may appear more a "pocket" implementation than a coordinated global approach.

response

Noted
 EASA is required to amend CS-ACNS to support compliance with CP1. Such amendment represents the minimum DL capability specifications needed to support compliance with CP1. This amendment should be followed by additional regulatory effort in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).
 Please, see the response to comment #278.

comment

72 comment by: Collins Aerospace
Real value generated for the Aviation / ATM stakeholders:
 The target date for AF6 / CP1 is 31 Dec 2027 (Assuming the Maturity Gate is OK). The Future Connectivity WP shows 2032 as a major milestone (Page 36) with introduction of technologies



	<p>bringing a clear value: ATN-IPS, Hyperconnected ATM, non-safety links for AOC (meaning also Full B2 Implementation). However, we do believe that deploying these separately instead of concurrently in 2032 drives unnecessary cost and technical challenges for the operator community. We believe that a unique "Technology Insertion" point for both the Network / Communication layer (e.g., IPS) and Application layer (e.g., CPDLC...) will reduce the overall cost of upgrade for the Airspace Users.</p>
response	<p>Noted</p> <p>EASA is required to amend CS-ACNS to support compliance with CP1. Such amendment represents the minimum DL capability specifications needed to support compliance with CP1. This amendment should be followed by additional regulatory effort in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).</p> <p>Please, see the response to comment #278.</p>
comment	<p>73 comment by: Collins Aerospace</p> <p><u>Partial Compliance with ED228 - Positive Economic Benefits Analysis (EBA):</u></p> <p>The AF6 mandates the implementation of the ADS-C / EPP service. It means that it partially covers the ED-228A document (new CPDLC messages are not mandated). Does it give a clear value to the Airspace Users if the full set of CPDLC messages is not implemented? With the foreseen release of the ED-228B, we are concerned by the costs of the necessary retrofits when a common solution US / Europe is foreseen from 2032.</p> <p>Even if this comment is related to the Ground Network (not considered in this NPA), as a Communication Service Provider, Collins Aerospace also wants to underline that a significant number of ANSPs have no / poor coverage below FL285. If an alternate Datalink is not enabled to downlink the EPP Data, it means that any Use Case leveraging the retrieval of EPP data below FL285 may not work with the current VDL Infrastructure.</p>
response	<p>Noted</p> <p>EASA is required to amend CS-ACNS to support compliance with CP1. Such amendment represents the minimum DL capability specifications needed to support compliance with CP1.</p> <p>The requirement for retrofit has not been established yet. Any subsequent regulatory effort will be made in conjunction with the current or future editions of the European Plan for Aviation Safety (EPAS).</p> <p>Please, see the response to comment #68.</p>
comment	<p>74 comment by: Collins Aerospace</p> <p><u>General Comment – Ground Counterpart Requirements:</u></p> <p>In addition, generation of EPP requires at a minimum a ground infrastructure to support the ADS-C Service to collect, aggregate and efficiently distribute the EPP Data. Yet, Ground requirements are not included. Beyond ADS-C, a robust and efficient implementation requires the inclusion of a "Common Service" covering multiple functions: Log-On, ADS-C Server...</p>



	including flexible design to cope with the future Technologies foreseen in the Future Connectivity WP: MultiLink, Hyperconnected ATM, LDACS, Data Integrity with Digital Signatures foreseen in IPS...
response	<p>Noted</p> <p>This amendment to CS-ACNS (Issue 5) is issued to support compliance with CP1 and in conjunction with the DL detailed specifications (DSs).</p> <p>DSs on DL for ground systems are provided in DS-GE.CER/DEC Issue 1.</p>
comment	<p>75 comment by: Collins Aerospace</p> <p><u>Dependency of the AF6 with other ATM Functions of the CP1 Mandate:</u></p> <p>Even if Collins Aerospace is not directly involved in the other AF CP1 Functions (1-5), we have understood that dependencies exist between the AFs. Typically, AF6 will deliver a clear value to the aviation stakeholders if AF5 is fully implemented (FF-ICE / SWIM). Recent discussions with European stakeholders suggest that the AF5 implementation may not be ready on-time.</p>
response	<p>Noted</p> <p>EASA is required to amend CS-ACNS to support compliance with CP1.</p> <p>Such amendment provides an element to support fulfilling the CP1 maturity gate requirements.</p>
comment	<p>76 comment by: Collins Aerospace</p> <p><u>Challenges to develop Compliant Avionics on time:</u></p> <p>Collins Aerospace is a major supplier of Datalink / Cockpit systems covering both the Commercial and Business Jet markets. As such, Collins Aerospace wants to underline that this deadline to implement an ADS-C / EPP capability is seen as extremely challenging as some aircraft configurations will require significant Aircraft Design changes. For example, this can include avionics updates to support the needed trajectory computational accuracy that provides the path to future implementation of Time of Arrival Control (TOAC) with Required Time of Arrival (RTA) capability, or modifications to existing communication management units in support of ATN B2. On some configurations, we even question the hardware capacity to generate the EPP data.</p> <p>Additionally, the structure of several market segments and the applicability of the ADS-C / EPP mandate will drive a potential mix of configurations on the same platform, mainly differing between forward fit and retrofit. This mix increases the likelihood of requiring suppliers, along with OEMs, to upgrade to another major block update for full ATN-B2 definition in a relatively short increment after the initial ADS-C / EPP mandate which we view as demanding and impactful to suppliers, OEMs and operators.</p>
response	<p>Noted</p>



The challenging equipage deadlines required by CP1 are acknowledged. The subject CS-ACNS proposal only provides the minimum DL capability specifications needed to support compliance with CP1.

The requirement for retrofit has not been established yet. Any subsequent regulatory effort will be made in conjunction with the current of future editions of the European Plan for Aviation Safety (EPAS).

comment

77

comment by: *Collins Aerospace***Impact on the Datalink Network:**

As a Communication Service Provider, Collins Aerospace is fully involved in activities to improve the performance of the current ATN B1 implementation. Despite the definition of mitigation plans to improve the quality of service of the VDL Network, we are very concerned by the impact of this additional EPP traffic that may speed up the Network Saturation.

As a service provider, we are also involved in the EIS of the IRIS Service (INMARSAT SATCOM Service). Yet, the adoption rate of IRIS by operators won't be likely fast enough to significantly contribute to the offload of the VDL Network within the next few years.

response

Noted

This is a valid concern; however, it needs to be addressed at the right level of documentation (i.e. implementing regulation, other). The subject CS-ACNS proposal only provides the minimum DL capability specifications needed to support compliance with CP1.

comment

79

comment by: *Dassault-Aviation*

Text: "It should be noted that aircraft currently certified are not intended to use the communication via DLS (Controller Pilot Data Link Communication - CPDLC) for non-routine, time critical situations, due to concerns related with the human machine interface and crew workload".

Comment: this sentence is unclear. Please clarify.

response

Noted

The current use of CPDLC is not intended to non-routine, time-critical situations.

The human-machine interface (HMI) and crew workload may not support the use of CPDLC in these situations and many aircraft have not been certified to support data link applications with hazard classification of worse than minor.

comment

80

comment by: *Dassault-Aviation*

As Aircraft manufacturer, we will do our very best to comply with the Mandate. Nevertheless, we confirm we may have some difficulties, or even impossibility, to be certified on time if the mandate is maintained at end 2027. Industrial roadmaps still to be



clarified, taking into account clear US Avionics certification process, Avionics packages upgrades needs and diversity of the Fleet.
Some deadline releases for some Programs would be welcomed, considering those Industrial concerns.
As Business Aviation, flying at or above FL410, access restriction to FL 285 would cause severe inefficiencies, environmental issues and unacceptable operational restrictions.

response Noted

The challenging equipage deadlines required by CP1 are acknowledged. Nonetheless, the subject CS-ACNS (Issue 5) only provides the minimum DL capability specifications needed to support compliance with CP1.

Comment 157

comment by: EUROCONTROL

"The Eurocontrol DSG/OFG has discussed the enforceability of the present DLS IR in terms of environmental effects at OFG#10 in April 2023.

The group concluded that due to the detrimental environmental effects (increased emissions) by flying at lower levels, since the DLS IR is not enforced right now (2023), it is not desirable to enforce the DLS IR and force aircraft to fly FL280 or below.

The OFG recommended a different, more environmentally-conscious approach for differentiating between compliant and non-compliant traffic filing to fly FL285+:

A) Slots should be assigned first for compliant traffic - only remaining ATC capacity shall be used by non-compliant aircraft

B) Route charges should be increased for non-compliant traffic above FL285 (eventually based on RFL)

C) Route charges should be increased for non-connected traffic above FL285 post-flight.

"

"Besides, it should be considered, that the present DLS IR only mandates equipage and not the usage of the technology - leading to another issue as although the aircraft complies with the regulation, yet it doesn't contribute to the expected benefits due to the lack of connection to the ATSU.

A future regulation with the same requirement will likely result in very similar outcome. The proposal should also enforce the use of the functionality."

Response Noted

The CS-ACNS scope is limited to the provision of certification specifications for airborne CNS, and such proposed policy and regulatory changes need to be addressed at the right level of documentation (e.g. implementing regulation) or other means.

Comment 158

comment by: EUROCONTROL



"It is confirmed that there are concerns related with the human machine interface and crew workload. Since a new system (CPDLC v2) is already available which tackles many of these problems, aircraft should not be certified in forward-fit configuration with an outdated ATN B1 CPDLC configuration anymore.
 By mandating CPDLC v2/v4, this concern can be mitigated. Keeping ATN B1 CPDLC as ""part of the future"" through acceptance renders safety to lower priority than development costs and efforts despite known safety issues:
 --> UM79 display and associated regular incidents on ATN B1 implementation

ED-228A defines a set of requirements under which messages should be loadable, which mitigates the above-mentioned issues with crew workload and HMI. It also provides the means for executing TBO operations as pilots don't need to type eg. LatLong coordinates or altitude/speed/time/RTA constraints, where the risk of human error is growing exponentially with message complexity.
 ED-228B improves these requirements and introduces further measures to reduce pilot workload through reducing the need for certain ground-to-air system messages and allowing DOA holders to not alert the pilot upon receipt of system management messages (SMM), which is expected to considerably lower flight crew workload and improve CPDLC acceptance. ED-228B also refers to the new ICAO Doc 10037 (GOLD manual 2024Q1) for recommended display of CPDLC messages to overcome the safety issues with incorrect HMI implementation, which lead to dangerous situations globally (eg. UM79 CLEARED TO - VIA)"

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability specifications needed to support compliance with CP1. If additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level (i.e. CP1).

Please, see the response to comment #68.

comment

159 comment by: EUROCONTROL

"Performance requirements allowing CSPs to not report service interruptions of less than 6 minutes (Source: Interpretation of EUROCAE ED-120 Performance Requirements v1.3, 3.3.2.5 Derivation of Availability Requirements), even if it causes dozens of aircraft to lose datalink connection as it has been the case at multiple ANSPs in Europe during the spring of 2023, including Maastricht UAC.
 Unexpected loss of uplinked messages and connections to multiple aircraft due to CSP issues cause very high workload spikes for ATCOs and can lead to unsafe situations.

The revised performance requirements in ED-228B are more stringent and allow ATC to require a consistent and reliable CPDLC-service, which leads to increased safety and capacity. This is also crucial for making future automation plans feasible.

"

response

Noted



This amendment to CS-ACNS (Issue 5) reflects the minimum design requirements for airborne DL equipment installation to support compliance with CP1. Nonetheless, the use of ED-228B can be requested. Please, see GM2 ACNS.B.DLS.001. For ground equipment requirements, please refer to DS-GE.CER/DEC Issue 1.

Please, see the response to comment #68.

comment

160

comment by: EUROCONTROL

"Referring to the possible certification issues: DOA holders must have been aware of EC IR2021/116 ""CP1"" regulation and its AF6 subpart since its publication in 2021. The regulation had already defined AF6 as the sub-part which requires the downlinking of trajectory information to be used also by the Network Manager (4.1.4). The regulation also outlines under 6.1.1(b) that compatibility must be kept with CPDLC services. DOA holders had plenty of early advisory of this regulation and it is not desirable to allow partial implementations only because some organizations might not have done their due diligence in informing themselves in time and prepare their development accordingly.

CPDLC v2(RevA) and CPDLC v4(RevB) are both fully backward compatible with ATN B1 CPDLC as defined in the ED-231A/B(to be published Q4/2023) standard.

ED-231A 1.2 Note 1 states that ""No backward compatibility requirements are defined for D-TAXI, ITP, OCL, DCL CPDLC services and ADS-C services. These B2 services are never provided to or by B1 systems.""

ED-231A 2.1.3 defines foreseen B2 airborne implementations as supporting either

A) all B2 data link services or

B) all B2 data link services except DRNP and IM.

As it can be seen above, no airborne implementation was ever considered neither in the RevA nor in the RevB standard which would allow the proposed partial implementation with ADS-C EPP only + ATN B1 CPDLC.

In case of serious concerns about certification, it is recommended to discuss with DOA Holders solutions to comply with the forward-fit requirements."

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL design requirements to support compliance with CP1. Nonetheless, applicants may choose to install additional DL capabilities beyond the minimum ADS-C EPP as required by CP1. Please, see GM2 ACNS.B.DLS.001.

Please, see the response to comment #68.

comment

161

comment by: EUROCONTROL

It is unclear how the regulation will be enforced to keep non-equipped aircraft below FL285.



	<ol style="list-style-type: none"> 1. Who will monitor equipage and through what means in the absence of proper flight planning designators even for full ADS-C equipage? 2. Who will take the decision whether a flight is allowed or not above FL 285 if the equipage does not allow it to? Is it the responsibility of NM or the ATSUs? 3. For how long can an aircraft fly with an inoperable datalink system? 4. What will be the effect of a partially inoperative datalink system eg. only CPDLC/ADS-C not working but the other part of the system does? How will this affect approval to fly above FL285? 5. Who will monitor flights which declare capable but never connect, since the regulation applies for equipage and not usage of the system? 6. How can ATC capacities take into account a system which is only mandated to be carried but not used? 7. How can ANSPs or the NM determine the CofA of an aircraft when applying the requirements?
response	<p>Noted</p> <p>CS-ACNS only represents the DL certification specifications for airborne CNS equipment. While such questions and topics are important, addressing them is outside the scope of the subject amendment to CS-ACNS. Many of these questions have been answered in various forums or are part of the frequently asked questions.</p>
comment	<p>162 comment by: <i>EUROCONTROL</i></p> <p>The proposal makes an assumption about the industrialization maturity of the ATS B2, which has been implemented by Airbus on hundreds of airframes and used in everyday operations at Maastricht UAC. While there is no doubt that certain aspects of certification might be difficult to handle in the allowed time, lowering the requirements should not be the solution to this issue.</p>
response	<p>Noted</p> <p>This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability specifications to support compliance with CP1. Nonetheless, applicants may choose to install additional capabilities. Please, see GM2 ACNS.B.DLS.001. It should be noted that not all manufacturers have equally progressed with the DL design and implementation to support compliance with CP1, as it may be observed from the comments provided.</p> <p>Please, see the response to comment #44.</p>
Comment	<p>205 comment by: <i>General Aviation Manufacturers Association / Hennig</i></p> <p>EASA notes in 2.3, Assessment of the issue, that it recognizes that meeting the 31 December 2027 deadline may be challenging and would depend on the aircraft and avionics configurations and to the extent the design changes needed.</p>



GAMA appreciates EASA for moving forward with providing the CS-ACNS amendment decision to contribute to fulfilling the maturity level gate requirement by providing standards to support AF6 CP1 by the 31 December 2023 deadline.

GAMA notes that some of the dependencies of this consultation are just now being made final. As an example, the joint EUROCAE WG-78 / RTCA SC-214 work activity submitted the referenced amendments to ED-228B and ED-229B for Council and Program Management Committee (PMC) approval on 7 September 2023, only one day prior to comments being due to NPA 2023-07. This NPA, however, references the approved standards (e.g., page 20 of 45 AMC1 ACNS.B.DLS.025 Protection mechanism "The data link system should comply with the following applicable standards: [...] EUROCAE Document ED-229A;" and page 23 of 45 AMC1 ACNS.B.DLS.055 DLIC Downlink Messages "...or ED 22A, section 2.4.1").

It is essential that EASA continues to work closely with Standards Development Organisations (SDO) to ensure pathways to certification for ADS-C EPP functionality are clear and harmonised. **EASA must also make clear that the CS ACNS update and associated AMC provide clarity about the permissibility of ED-228 and ED-229 Revision A and the soon to be approved Revision B as part of finalising the amendment to CS-ACNS. The successful implementation of the AF6 ADS-C EPP functionality will depend on clarity about the technical standards planned to be used and their maturity.**

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability specifications to support compliance with CP1. Nonetheless, applicants may choose to install additional capabilities or use later, acceptable standards. Please, see GM2 ACNS.B.DLS.001.

Please, see the response to comment #68.

comment

207

comment by: IATA

EASA text in this section - "meeting the 31 December 2027 deadline may be challenging and would depend on the aircraft and avionics configurations and on the extent of the design changes needed."

IATA Comment: Although the statement is understood, we invite to reflection on the fact that meeting a regulatory deadline has to be feasible, without any possible doubt, when the regulation enters into force. It is of concern that we already consider the current deadline "challenging" at the doorstep of the decision on the maturity gate. It suggests there are unresolved issues, lack of maturity, lack of equipment availability, etc.

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability specifications to support compliance with CP1. Applicants may choose to install additional capabilities. Please, see GM2 ACNS.B.DLS.001.

Please, see also the response to comment #68.



comment	<p data-bbox="354 203 406 235">209</p> <p data-bbox="1230 203 1474 235">comment by: IATA</p> <p data-bbox="354 262 1474 401">EASA text in this section: "While the issue assessed is only the support to operators' need to comply with AF6 CP1 requirements, the remaining data link issues intended to be addressed by the RMT.0524 could be captured in various 'regular update' rulemaking tasks or by the RMT.0682"</p> <p data-bbox="354 436 1474 554">IATA comment: Please provide more detail on the "remaining data link issues", how they affect both the topic addressed here and AF6 in general, and clarify the plan to address them in the two RMTs mentioned.</p>
response	<p data-bbox="354 569 431 600">Noted</p> <p data-bbox="354 621 1474 760">This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability specifications to support compliance with CP1. Any subsequent regulatory changes will be done in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS). Please, see the response to comment #278.</p>
comment	<p data-bbox="354 842 406 873">210</p> <p data-bbox="1230 842 1474 873">comment by: IATA</p> <p data-bbox="354 894 1474 999">EASA text in the section: "A future RMT.0682 subtask may consider addressing the current and future connectivity challenges, in alignment with the common vision proposed by the white paper on the 'Future connectivity for aviation' . "</p> <p data-bbox="354 1035 1474 1226">IATA comment: The White Paper has no regulatory character and it is not considered appropriate to transform it into regulatory material. "The common vision" was not developed with the participation and involvement of a sufficient number of stakeholders. Further discussion is needed on the contents of that paper before they enter into any planning or enforcement process.</p>
response	<p data-bbox="354 1241 431 1272">Noted</p> <p data-bbox="354 1293 1052 1325">Please see the responses to comments #24, #25 and #278.</p>
comment	<p data-bbox="354 1402 406 1434">257</p> <p data-bbox="1230 1402 1474 1434">comment by: NATS</p> <p data-bbox="354 1461 1474 1600">Here it is stated that any aircraft not compliant with the CP1 mandated avionics capability after the deadline of 31st December 2027 will not be able to fly above FL285. However, the avionics mandate is clearly a forward fit mandate only and so there will be a vast majority of aircraft unequipped in this way for a good period fo time, maybe years after the deadline.</p> <p data-bbox="354 1635 1474 1810">This will mean that huge amounts of aircraft will be forced to fly below FL285. This will undoubtedly cause huge capacity issues if enforced. How will it be enforced, is there to be some sort of exemption mechanism applied? How would such a mechanism be visible on flight plans to be used operationally and by NM in flow management decisions? These issues need to be dealt with before this limitation on aircraft altitudes can be enforced.</p>



response	<p>Due to the nature of the mandate, being forward fit, this limitation should not be enforced operationally. It can be enforced however through certification requirements for avionics, and this should be done in terms of no certifications to be approved after this date without the specified capability.</p> <p>Noted</p> <p>In accordance with CP1, only aircraft with a CofA issued on or after 31 December 2027 must comply with the ADS-C EPP CP1 capability mandate.</p> <p>In accordance with CP1, there is indeed no retrofit requirement proposed for aircraft with a CofA issued before 31 December 2027. Therefore, such aircraft for which the CP1 requirement is not applicable can access the airspace above FL285 without being required to be ADS-C EPP capable.</p>
comment	<p>269 comment by: DGAC FR (Mireille Chabroux)</p> <p>It is written: <i>"the target date defined in the CP1 regulation for specification and standards availability supporting AF6 implementation is 31 December 2023"</i></p> <p>Considering the potential need to issue a revision-B of ED-228 and ED-229 following issuance by Eurocontrol of specifications/guideline on SWIM service, is it confirmed that revision-A of ED-228 and ED-229 are deemed as suitable to support ADS-C EPP capability certification ?</p> <p>Also, if relevant, suggestion to use the following wording in the entire CS-ACNS (ED-228A/ED-229A or subsequent revisions).</p>
response	<p>Noted</p> <p>This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability specifications to support compliance with CP1. Nonetheless, applicants may choose to install additional capabilities or use later acceptable standards. Please, see GM2 ACNS.B.DLS.001.</p> <p>The wording 'or subsequent revisions' was avoided in the regulatory text as it is potentially possible that a subsequent revision may introduce additional features that are not required.</p> <p>Please, see the response to comment #68.</p>
comment	<p>270 comment by: DGAC FR (Mireille Chabroux)</p> <p>It is written <i>"therefore an action is required before reaching this target date."</i></p> <p>In the framework of recent EASA efforts to introduce additional aircraft capabilities, several OEMs identified too late the associated regulation requirements hence a late start of certification activities and inability to deliver compliant aircraft in time regarding the mandatory timeframes.</p> <p>Non-readiness of necessary standard material was not at fault in those cases. It is expected</p>



	<p>that a root-cause analysis (lack of EASA communication ?) be conducted and the necessary measures taken by EASA to ensure that no such situation re-occurs for the discussed ADS-C EPP implementation.</p>
response	<p>Noted</p> <p>There were numerous discussions among the RMG.0524 stakeholders on the extent of the airborne CNS equipment certification specifications needed to support compliance with CP1 with no conclusive outcome. Furthermore, the scope of the certification specifications for airborne CNS equipment needed to be compatible with the scope of the detailed specifications for ground systems, which were recently published.</p>
comment	<p>271 comment by: DGAC FR (Mireille Chabroux)</p> <p>It is written: <i>"It should be noted that aircraft currently certified are not intended"</i></p> <p>It is suggest to change the wording (discussed requirement does not relate to the fact of being currently certified or not) : "... noted that aircraft are not currently required to use ..."</p>
response	<p>Partially accepted</p> <p>Indeed, existing fleets are not required to use CPDLC messages for non-routine, time-critical situations, based on the current operational intent. Moreover, many aircraft types/models may not support the CPDLC messages used for non-routine and time-critical situations due to concerns related with human-machine interface (HMI) and crew workload.</p>
comment	<p>277 comment by: SESAR 3 JU</p> <p>The following text should be removed: <u>in alignment with the common vision proposed by the white paper on the 'Future connectivity for aviation'.</u></p> <p><i>While the issue assessed is only the support to operators' need to comply with AF6 CP1 requirements, the remaining data link issues intended to be addressed by the RMT.0524 could be captured in various 'regular update' rulemaking tasks or by the RMT.0682 on 'Implementation of the regulatory needs in support of the SESAR deployment'. A future RMT.0682 subtask may consider addressing the current and future connectivity challenges, in alignment with the common vision proposed by the white paper on the 'Future connectivity for aviation'. The planning for this subtask should be established in a future EPAS revision synchronised with the ATM Master Plan.</i></p>
response	<p>Noted</p> <p>Please, see the response to comment #24.</p>
comment	<p>282 comment by: Gulfstream Aerospace Corporation</p>



	<p>Gulfstream Aerospace Corporation:</p> <p>Comment: What, if any, are the possible work arounds for accessing the airspace above FL 285?</p> <p>Rationale: There should be other mitigating allowables for aircraft that are not equipped according to AF6 CP1 due to the compressed timeline.</p> <p>Recommended Change: Consider allowing to switch to voice or other mitigating work arounds. List the other possible mitigation or crew actions to avoid limitations and penalties.</p>
response	<p>Not accepted</p> <p>Compliance with CP1, where applicable, is required. Please note that this discussion on mitigation measures, including crew actions, would be outside the scope of CS-ACNS.</p>

2.4. Who is affected by the issue	p. 8
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comment	<p>46 comment by: <i>Air France</i></p> <p>Not agreed.</p> <p>ATN B1 experience shows that <u>all ATM stakeholders</u> are impacted when adaptations, mitigations or temporary are introduced. With option 1 (ADS-C EPP implementation only), CSPs, ANSPs, performance monitoring, etc... will also be affected, as temporary mechanisms will be needed to accommodate various configurations:</p> <ul style="list-style-type: none"> • B1 aircraft • Full B2 aircraft (hundreds already flying) • B2 with only ADS-C EPP <p>The global EU ATM community would have to cope with new issues again</p>
response	Noted

comment	<p>163 comment by: <i>EUROCONTROL</i></p> <p>"Indirectly impacted stakeholders (ANSPs) should be considered. The proposal in its present form generates a negative global impact on aviation, as out-of-standard and partial implementations will have to be handled by all ANSPs in the world.</p>
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1. The introduced additional possible equipment configurations would create serious issues for ground-to-ground coordination and the logon process. Overcoming this would require complicated and costly ground system upgrades: new OLDI messages would probably also be required as well as an update of the ATS B2 standard to allow and provide clear guidance for all combinations (including FANS1/A) and their backward-compatibility requirements. New flight planning designators would also be needed for indicating exact capabilities.

Possible configurations according to current version of NPA 2023-07:

-CPDLC v1 (legacy CPDLC, what we have now in majority, also known as ATN B1 - all CPDLC-equipped traffic except for the SESAR PJ38 aircraft + a few new Airbuses as mentioned below)

-CPDLC v2+full ADS-C V1 (full RevA, current Airbus aircraft with FANS-C configuration+SESAR PJ38 aircraft)

-CPDLC v4+full ADS-C v3 (full RevB, this is the most desirable for ANSPs)

New configurations (without considering FANS1/A)

-CPDLC v1+ADS-C v1 EPP only ([reduced capabilities] other than Airbus manufacturers as per the AF6/CP1 mandate minimum requirements)

-CPDLC v1+full ADS-C V1 (more than the new mandate[full ADS-C] and with legacy CPDLC)

-CPDLC v1+full ADS-C v3 (ADS-C Revision B[full ADS-C], but with legacy CPDLC)

-CPDLC v1+ADS-C v3 EPP only (as per new mandate[reduced capabilities] with RevB but with old CPDLC)

-CPDLC v4+ADS-C v3 EPP only (as per new mandate[reduced capabilities] with RevB but CPDLC B2 RevB)

2. Through introducing these new configurations, the long-awaited replacement for FANS1/A in the areas outside of Europe would be in jeopardy and a need for even more ""hybrid"" configurations than the ones listed above would arise. In oceanic regions CPDLC and ADS-C in combination is vital for maintaining a safe, orderly and efficient flow of traffic.

3. ATCOs might have to deal with even more ""configurations"" as various parts of the system (CPDLC and/or ADS-C) can be non-operational or disabled by the flight crew, which further complicates the handling of traffic."

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum changes needed to support operators' compliance with CP1.

Configuration added at this amendment is CPDLC v1 and ADS-C EPP only. Nonetheless, EASA will support applicants that wish to add capabilities beyond the minimum requirements.

With regard to the capabilities required for DL ground systems, please refer to DS-GE.CER/DEC Issue 1.

Please, see the response to comment #160.

comment

261

comment by: ATR



Section 2.3 “Assessment of the issue” states: [QUOTE] *Aircraft operators are affected by the AF6 CP1 requirements when performing general air traffic (GAT) flights in accordance with instrument flight rules (IFR) above FL 285 within the Single European Sky (SES).* [UNQUOTE]

It is thus proposed to clarify the extent of applicability of this new CS-ACNS amendment within section 2.4 “Who is affected by the issue” of the NPA.

The following text is proposed:

[QUOTE]

While the stakeholders impacted by the AF6 CP1 include ATS providers, NM, air traffic controllers (ATCO)s, the impact of this CS-ACNS amendment is limited to:

- *DOA holders for aircraft operations above FL 285,*
- *Production organisations,*
- *Aircraft operators operating above FL 285.*

[UNQUOTE]

response

Not accepted

While it is agreed that the operations affected are GAT IFR operations above FL285, this fact is already stated at regulation level (Commission Implementing Regulations (EU) 2023/1770 and (EU) 2021/116).

2.7. How we want to achieve it - overview of the proposed amendments

p. 9

comment

29

comment by: ENAIRE

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
9	2.7 How we want to achieve it - overview of the proposed amendments	Modify the title of various paragraphs to remove the term ‘B1’, as the focus of the CS-ACNS should no longer be ATN B1 services and applications only.		Ok, we agree but we need to be careful with this because it won't be either (full) B2. ADS-C EPP (mandated by CP1 AF6 after the end of 2027) is just one service/capability within the complete set of B2 services/capabilities.

response

Noted



comment	<p>82 comment by: <i>Dassault-Aviation</i></p> <p>Question page 10:</p> <div style="border: 1px solid gray; padding: 5px;"> <p>[...] to comment if there is still a need to reflect in CS-ACNS the paragraphs related to the protection mechanism [...]</p> <p>Answer: DA position is to withdraw this requirement because it is redundant with other specifications for datalink as mentioned is the NPA.</p> </div>
response	Noted
comment	<p>83 comment by: <i>Dassault-Aviation</i></p> <p>Question page 10:</p> <div style="border: 1px solid gray; padding: 5px;"> <p>[...] to comment if the means of compliance in AMC 1 ACNS.B.DLS.077 represents the minimum and sufficient means [...]</p> <p>Answer: DA position is OK. the requirement are at an appropriate level</p> </div>
response	Noted
comment	<p>84 comment by: <i>Dassault-Aviation</i></p> <p>Question page 10:</p> <div style="border: 1px solid gray; padding: 5px;"> <p>[...] to comment if the requirements proposed in CS ACNS.B.DLS.097 and associated AMC represent the minimum and sufficient safety and performance requirements [...]</p> <p>Answer: DA position is OK. the requirements are at an appropriate level</p> </div>
response	Noted
comment	<p>151 comment by: <i>EUROCONTROL</i></p> <p>page 10</p> <p>The paragraphs on Protection Mechanism (NPA pages 20 – 21) can now indeed be removed since the relevant requirements are now integrated to the base standards, specifically:</p> <ul style="list-style-type: none"> - ICAO Doc 9880 Part I Chapter 3 “Controller-Pilot Data Link Communications Application” and Chapter 6 “ATN Message Integrity Check Algorithm”, and



response	ED-229A section 3.2.4 for ADS-C and section 3.3.4 for CPDLC Noted
comment	<p>152 comment by: EUROCONTROL</p> <p>"Stakeholders are invited to comment if the means of compliance in AMC 1 ACNS.B.DLS.077 represents the minimum and sufficient means to demonstrate compliance with the ADS-C EPP message exchanges requirements in CS ACNS.B.DLS.077."</p> <p>In principle, AMC 1 ACNS.B.DLS.077 is a sufficient specification for ADS-C EPP. However, note that the term "EPP" is not defined in ED-229A but ED-229A and ED-228A will soon be superseded by Rev B documents.</p>
response	<p>Noted</p> <p>The EPP definition has been added in CS ACNS.A.GEN.005 <i>Definitions</i>.</p>
comment	<p>153 comment by: EUROCONTROL</p> <p>"Stakeholders are invited to comment if the requirements proposed in CS ACNS.B.DLS.097 and associated AMC represent the minimum and sufficient safety and performance requirements and adequate means of compliance to support the intended operations."</p> <p>In principle, the proposed requirements appear to be sufficient. Note ED-228A will soon be superseded by Rev B.</p>
response	Noted
comment	<p>154 comment by: EUROCONTROL</p> <p>"Stakeholders are invited to comment if there is still a need to maintain the paragraphs related to the various ATN layers (network, transport, session, presentation, application) in the CS-ACNS"</p> <p>The requirements specified for network, transport, session, presentation and application layers (NPA pages 32 - 36) do appear to be out of place in the CS-ACNS, in that the level of technical detail is too great. However, the details should be specified somewhere, for example in the EUROCONTROL Specification for Data Link Services. In particular, the application layer requirements could be removed as they are part of the basic design of the data link system.</p>
response	Noted
comment	<p>199 comment by: Garmin International</p> <p>2.7 How we want to achieve it — overview of the proposed amendments :Page 10</p> <p>Proposed Text:</p>



Garmin has the opinion that the Protected Mode requirements don't need to be explicitly mentioned. The PM-CPDLC is considered to be an inherent part of the existing ATN B1 system.

Justification:

Stakeholders are invited to comment if there is still a need to reflect in CS-ACNS the paragraphs related to the protection mechanism, or if these can be removed since the CPDLC Protected Mode (PM-CPDLC) has been baselined and is part of the basic design of data link system (the understanding of CPDLC today is PM-CPDLC).

response Noted

comment 200

comment by: *Garmin International*

2.7 How we want to achieve it — overview of the proposed amendments :Page 10

Proposed Text:

The definitions of data link capabilities can always have more description as they are relatively complex. With that said, the most basic description of the capability is the receipt of contracts and the resulting EPP report. All of the specific requirements for these capabilities can be captured by the references to ED-229.

Justification:

Stakeholders are invited to comment if the means of compliance in AMC 1 ACNS.B.DLS.077 represents the minimum and sufficient means to demonstrate compliance with the ADS-C EPP message exchanges requirements in CS ACNS.B.DLS.077.

response Noted

comment 201

comment by: *Garmin International*

2.7 How we want to achieve it — overview of the proposed amendments :Page 10

Proposed Text:

Garmin considers the references to ED-228 to be sufficient in defining the safety and performance requirements. The applicant can extract the applicable requirements from those sections which are applicable to the ADS-C application and/or the EPP report.

Justification:

Stakeholders are invited to comment if the requirements proposed in CS ACNS.B.DLS.097 and associated AMC represent the minimum and sufficient safety and performance requirements and adequate means of compliance to support the intended operations.



response Noted

comment 202 comment by: *Garmin International*

2.7 How we want to achieve it — overview of the proposed amendments :Page 10

Proposed Text:

Garmin does not consider it necessary to call out these layers explicitly. The top level definition of the ATN B1 system inherently includes these layers.

Justification:

Stakeholders are invited to comment if there is still a need to maintain the paragraphs related to the various ATN layers (network, transport, session, presentation, application) in the CS ACNS.

response Noted

comment 203 comment by: *Garmin International*

2.7 How we want to achieve it — overview of the proposed amendments :Page 10

Proposed Text:

While the ATS B2 system calls out ICAO 9880, the ATN B1 system is mostly developed to ICAO 9705. It is believed that ICAO 9705 + PDRs should map to ICAO 9880, but Garmin has not yet performed such a tracing exercise. Prior to 31 Dec 2027, it remains possible that an applicant may intend to certify an ATN B1 only system. If that happens, and if the applicant is using the version of CS-ACNS that will emerge from this NPA, is the expectation that the statements of compliance must be made with regards to ICAO 9880? Will it be possible to use this upcoming version of CS-ACNS to certify just an ATN B1 system? If so, consider wording that allows such a certification and define if references can still be made to ICAO 9705.

Justification:

Various AMCs on ‘CPDLC uplink and downlink messages’ are updated to replace the references to ICAO Doc 9705 by the references to ICAO Doc 9880.

response Noted

Please, see the response to comment #112.

comment 240 comment by: *Airbus-Regulations-SRg*

p10 / §2.7 How we want to achieve it — overview of the proposed amendments



Stakeholders are invited to comment if there is still a need to reflect in CS-ACNS the paragraphs related to the protection mechanism, or if these can be removed since the CPDLC Protected Mode (PM-CPDLC) has been baselined and is part of the basic design of data link system (the understanding of CPDLC today is PM-CPDLC).

COMMENT :

Airbus believes that it is not needed anymore to reflect the paragraphs related to the protection mechanisms.

We propose to remove CS ACNS.B.DLS.025, AMC1 ACNS.B.DLS.025, AMC2 ACNS.B.DLS.025, AMC3 ACNS.B.DLS.025

RATIONALE:

The “old” version of CPDLC without protection is deprecated and the version of CPDLC in B1 (ED-110B) or B2 (ED-229) includes by default the protection mechanisms.

response Noted

comment

272

comment by: DGAC FR (Mireille Chabroux)

It is written:

"the following amendments to CS-ACNS Subpart B 'Communications', Section 2 'Data link services' are proposed:

—
 — *The CS ACNS.B.DLS.B1.015 on 'Flight deck interface' is updated to accommodate ADS-C EPP. Flight crew should be able to terminate ADS-C connections."*

The expected update of this requirement is not reflected in section 2 of this NPA. The only modification is the removal of term 'B1'.

response

Partially accepted

The specification for 'flight deck interface' is CS ACNS.B.DLS.B.010, and not as stated in Section 2.4 of NPA 2023-07.

Nonetheless, the changes proposed to CS ACNS.B.DLS.B.010 reflect the intent to accommodate ADS-C EPP.

2.5. How could the issue evolve

p. 9

comment

47

comment by: Air France

Detailed certification specifications supporting AF6 CP1 requirement for ADS-C EPP are already available today. And deployed.

We operate daily 25 A320 aircraft, full ATS B2, iaw ED-228A.



	Question is therefore not to solve detailed certification specifications, but to manage delay in certification with some aircraft manufacturers, with regards to CP1 target date.
response	Noted
comment	211 comment by: IATA Avoiding as much as possible the issue of "special conditions" is supported, flexible while harmonized regulatory material is always preferred.
response	Noted
comment	212 comment by: IATA EASA text in the section: "missing the AF6 CP1 industrialisation target date, which may lead to the removal of AF6 from CP1." IATA Comment: To be clarified why the lack of regulatory action will only result in the removal of AF6. Not passing the industrialization gate could have an intermediate step in between the all or nothing, such as a delay of the mandate through an amendment of the CP1 regulation, not just a binary "all-or-nothing" consequence.
response	Noted However, such an approach cannot be decided at CS-ACNS level, but rather at the right level of documentation (i.e. implementing regulation).

2.6. What we want to achieve - objectives

p. 9

comment	48 comment by: Air France We consider industrialization target date is not jeopardized today by any lack of regulatory action. ADS-C EPP is already defined in an approved standard, and already operationally used with success in Europe. Difficulties for certain manufacturers to develop against already this approved standard is not relevant regarding industrialization criteria defined in CP1.
response	Noted
comment	164 comment by: EUROCONTROL "In order to allow more time for development/implementation, MUAC proposes the following compromise for forward-fit: Between January 2028 - January 2030: -full RevA (ADSC v1 + CPDLC v2) is acceptable for forward-fit



	<p>-exemption for airframes equipped with CPDLC v1 until January 2030</p> <p>After January 2030: -full RevB (ADSC v3 + CPDLC v4) only -no exemptions on forward-fit</p> <p>The complete ATS B2 Revision A standard (ED-228A/-229A/-230A/-231A) has been available since 2016."</p>
response	<p>Not accepted</p> <p>Such forward-fit proposal cannot be incorporated at CS-ACNS level, but rather at the right level of documentation (i.e. implementing regulation).</p> <p>CS-ACNS can only impose design requirements for new designs or changes to type designs in accordance with Part 21.</p>

2.8. What are the stakeholders' views p. 10

comment	<p>2 comment by: <i>ETF ATM PSO</i></p> <p>Regarding the level of performance of CPDLC technology (Full or Reduced ATS B2 with partial capabilities), we ETF are not really convinced that all ATSUs will exploit the full performance of EPP in the coming years. , there is a lack of coordination within Europe and the internal development of the HMI in the different ACCs is not the same.</p>
response	<p>Noted</p>

comment	<p>30 comment by: <i>ENAIRE</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #4F81BD; color: white;"> <th>Page</th> <th>Article/AMC/GM/CS</th> <th>Original Text</th> <th>Proposed amended text</th> <th>Rationale</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">11</td> <td>2.8 What are the stakeholders' views</td> <td>A specific work package (WP2 of RMT.0524) to amend the CS-ACNS was established. The result of this work package was a comprehensive revision of the CS-ACNS, where, depending on the operational needs, the applicants could choose the data link, network, and subnetwork.</td> <td></td> <td>Please, clarify what do you mean by "applicants could choose the data link, network, and subnetwork." Are you referring to different A/G datalink technologies, i.e., VDLm2, SatCom, LDACS, etc.? If that's the case, what are the criteria and the specific technical drivers to choose one or another A/G data link based on</td> </tr> </tbody> </table>	Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale	11	2.8 What are the stakeholders' views	A specific work package (WP2 of RMT.0524) to amend the CS-ACNS was established. The result of this work package was a comprehensive revision of the CS-ACNS, where, depending on the operational needs, the applicants could choose the data link, network, and subnetwork.		Please, clarify what do you mean by "applicants could choose the data link, network, and subnetwork." Are you referring to different A/G datalink technologies, i.e., VDLm2, SatCom, LDACS, etc.? If that's the case, what are the criteria and the specific technical drivers to choose one or another A/G data link based on
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				<p>the mentioned operational needs? This is ambiguous and it should be further clarified.</p> <p>Again, please, consider that backwards compatibility shall always be ensured and that the use of proprietary solutions must be avoided to prevent monopolistic situations.</p>
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response

Noted

The solution initially proposed in work package 2 of RMT.0524 was to offer stakeholders the possibility to select the suitable data link solution depending on the data link installation meeting the safety, performance and interoperability criteria suitable for the airspace where the airspace user intends to operate.

Backwards compatibility is ensured by ground equipment.

Please, see the response to comment #26 on detailed specifications for DL ground systems as provided in DS-GE.CER/DEC Issue 1.

comment

49

comment by: Air France

We do not support this position.

1. Even if they are not requested by CP1, other ATS B2 applications are fully complementary to get benefits from ADS-C EPP
2. There is no indication that costs for ADS-C EPP only will be less than full ATS B2.
 - o Most of ATS B2 development costs are related to FMS interface, which is needed to implement ADS-C EPP.
 - o Experience shows that CPLDC V2 can not be operationally de-correlated from ADS-C EPP. If we have to retrofit later to implement CPLDC V2, we can expect higher costs than implementing full B2 since start

See comments on chapter 3 for more explanations

response

Noted

Please, see the response to comment #68.



comment	85	comment by: <i>Dassault-Aviation</i>
	Page 11.	
	<p>To comply as possible with the mandate deadline and content, we foresee option 1 with EPP only, although operator value contribution remains difficult to appreciate. Indeed ATS B2 capability seem to be the best valuable solution for operators, but beyond economical issues, due to lack of Ground mandate for such capabilities, Technical DL issues and deployed common solutions would need to be clarified. Further more, no Industrial Roadmap feasibility for those capabilities is acquired for the moment for our Fleet.</p>	
response	Noted	
	Please, see the response to comment #68.	
comment	86	comment by: <i>Dassault-Aviation</i>
	Full workable, interoperable, common solution for DL is needed to support 4DBT. EASA/FAA initiative and white paper is fully supported.	
response	Noted	
comment	165	comment by: <i>EUROCONTROL</i>
	<p>"The proposal refers several times to the development and certification costs of an equipment which is aimed to increase safety, while suggesting that ""the use of such capability by the ANSPs may only gradually increase over time"".</p>	
	<p>However, according to data maintained by the Network Manager, during the ATN B1 CPDLC implementation ground support has increased in-line with airborne equipage, both reaching about 70% by February 2019. Yet, while the ground equipage has increased to 92.5% by July 2023, airborne equipage is stagnating at 82% with the high-performance avionics only contribution to around 77% (based on MUAC traffic figures). This demonstrates that it is:</p> <ol style="list-style-type: none"> 1) Not possible to reach the ideal 100% airborne equipage 2) It takes much more time to reach the desired ""critical"" amount of equipped airframes which can bring the combined benefits of more reliable trajectory predictions to a network level which allows capacity planning accordingly. 	
	<p>The ADS-C common service will provide ANSPs with access to the full functionality of the ADS-C application through a SWIM interface; therefore ground systems will have a much smaller task to implement the new functionalities. "</p>	
response	Noted	
	It is expected that the use of such data link capability will gradually increase in the SES to take full advantage of the technical capability of the data link systems (see limited number of CPDLC	



messages currently exchanged by many ANSPs, although the data link Regulation (Commission Regulation (EC) No 20/2009) was in force for more than 4 years).

Furthermore, it should be taken into that in Commission Regulation (EC) No 29/2009 (repealed and replaced by Commission Implementing Regulation (EU) 2023/1770) ANSPs' compliance was required 2 years prior to the airspace users' compliance deadline.

comment 166 comment by: EUROCONTROL

""and is planned to be used by the ground equipment"": MUAC has been using a set of additional functionalities (eg. TOA RANGE) in addition to the ADS-C EPP since 2019 for MUAC ATCOs. MUAC will display the ADS-C Speed Schedule to help ATCOs with speed control and reduce RT usage as of Q1/2024.

response Noted

Please, see the response to comment #68.

comment 167 comment by: EUROCONTROL

"MUAC's future capacity increase relies on the use of the ADS-C RevB aircraft downlinking the VHF Active Frequency data group containing the selected VHF frequencies on board - this group is expected to increase safety, reduce loss of communication events and open the way to further reduce RT usage by exploring the possibility of silent ATC sector transfers within the same ANSP's airspace. Currently initial calls largely contribute to the radio telephony usage of a sector and they are considered a capacity limiting factor (entries). ANSPs might also consider to use the Ground vector (true track - for a more reliable use than radar headings), RTA status as well as the RevB Holding data group in the future. The use of the full ATS B2 baseline will suport the future TBO and automation implementation roadmap.

response Noted

Please, see the response to comment #68.

comment 168 comment by: EUROCONTROL

Regarding the sentence "only a limited part...is planned to be used by the ground equipment": ANSPs have highly different working methods due to diverse requirements, which makes the required data groups also more or less relevant depending on the type of handled traffic. For example, while upper area centres are not going to need final approach speed data, lower centres might not need other parameters - nevertheless the application provides a set of functionalities which can be used at different stages of the flight.

response Noted



comment	206	comment by: <i>General Aviation Manufacturers Association / Hennig</i>
	<p>EASA seeks input from stakeholders if the means of compliance in AMC 1 ACNS.B.DLS.077 represents the minimum and sufficient means to demonstrate compliance with the ADS-C EPP message exchange requirements in CS ACNS.B.DLS.077.</p> <p>EASA does identify in CS ACNS.B.DLS.077 references to EUROCAE Document ED-228A, Sections 6.1 and 6.2 and EUROCAE ED-229A, Sections 3.2 and 5.3 to support the exchange of EPP.</p> <p>Lessons learned from prior implementations of data link communications are that increased specificity helps improve interoperability of services. EASA has, however, provided the minimum of needed information to support airborne equipage.</p>	
response	Noted	

comment	208	comment by: <i>General Aviation Manufacturers Association / Hennig</i>
	<p>EASA seeks input from stakeholders if the means of compliance in CS ACNS.B.DLS.097 and AMC represents the minimum and sufficient means to demonstrate performance requirements and adequate means of compliance to support the intended operations.</p> <p>EASA does identify in CS ACNS.B.DLS.097 references to EUROCAE Document ED-228A, Sections 6.3.1 and 6.3.2 to support the exchange of EPP.</p> <p>Lessons learned from prior implementations of data link communications are that increased specificity helps improve interoperability of services. EASA has, however, provided the minimum of needed information to support airborne equipage.</p>	
response	Noted	

comment	241	comment by: <i>Airbus-Regulations-SRg</i>
	<p>p11 / §2.8 What are the stakeholders' views</p> <p>PROPOSED TEXT: Removal of the last sentence: <i>"Further concerns were raised on the adequacy and complexity of standards supporting the data link installations, prompting EASA to request standardization bodies to consider a minimum operations performance standard for the Communication Management Unit (CMU)."</i></p> <p>RATIONALE: Even if an action is ongoing at EUROCAE to identify the list of relevant and applicable standards, Airbus disagrees with the statement that standards supporting data link installations are not adequate. Indeed, they are complex, but the data link capability is complex.</p>	



It is considered not complex identifying the applicable standards for a given Data link installation.
 Defining MOPS for the CMU is not relevant since:

- It encompasses different technologies and layers (link, network, application) and when necessary, MOPS already exist for these layers
- CMU is one type or architecture amongst many others (more integrated or distributed)

response Noted

comment 263 comment by: DGAC FR (Mireille Chabroux)

In response to the question regarding PM-CPDLC, DGAC-FR considers that PM-CPDLC is still needed. It proved its use in the past to detect corrupted messages or wrong addressees.

response Noted

comment 281 comment by: Gulfstream Aerospace Corporation

Gulfstream Aerospace Corporation:

Comment:

CMU software block should not trigger a separated 'allowed list' similarly to the 'logon list' where a particular CMU software would allow a particular operator to be in the logon list but yet forced to fly below FL 285 due to lack of EPP CP1 implementation (if CofA are on or after 12/31/2027).

Rationale:

The timeline to comply may be too short in order to adhere to the performance standards

Recommend Change:

EASA should consider relaxing the minimum operations performance standards if the implementation of ADS-C EPP is absent. Timeline to comply should be considered to be extended in order to allow more time to comply.

response Not accepted

Compliance with CP1 is required where applicable. Changes to equipage deadlines cannot be introduced at CS-ACNS level, but rather at the level of the appropriate documentation (i.e. implementing regulation).

2.9. Other relevant information

p. 11

comment 31

comment by: ENAIRE



Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
11	2.9 Other relevant information	<p>2.9. Other relevant information</p> <p>Together with other stakeholders and at EASA’s initiative, a white paper on FCAV has been published. The vision and strategy outlined in this paper establishes timelines for data links supported by different technologies and protocols as aligned with the current AF6 CP1 mandates and foreseen targets for standards publications. The time fence related with the ADS-C EPP in the FCAV paper is 31 December 2027 and is aligned with AF6 CP1 mandate. Furthermore, FCAV also provides 2032 as target date for full B2 capability supported by different technologies and protocols, in particular the Internet Protocol Suite (IPS).</p>	<p>2.9. Other relevant information</p> <p>Together with other stakeholders and at EASA’s initiative, a white paper on FCAV has been published.</p> <p>The vision and strategy outlined in this paper establishes timelines for data links supported by different technologies and protocols as aligned with the current AF6 CP1 mandates and foreseen targets for standards publications.</p> <p>The time fence related with the ADS-C EPP in the FCAV paper is 31 December 2027 and is aligned with AF6 CP1 mandate.</p> <p>Furthermore, FCAV also provides 2032 as target date for full B2 capability supported by different technologies and protocols, in particular the Internet Protocol Suite (IPS).</p>	<p>The mentioned FCAV white paper did not include neither consider the contribution from relevant European data link stakeholders.</p>

response Noted

Please, see the response to comment #24.

comment 50

comment by: Air France



FCAV White Paper should not be referenced in this NPA. FCAV white paper has been elaborated and acknowledged only between EASA, FAA and two aircraft manufacturers, without consultation of all other ATM/CNS stakeholders:

- Airlines and their associations
- EU ATM stakeholders (SJU, SDM, ETCL)
- Communication Service Providers
- ANSP
- Other aircraft and avionic manufacturers

response

Noted

Please, see the response to comment #24.

comment

109

comment by: *Lufthansa Group***Future air/ground communication requirement**

Not in the CS/ACNS proposal, but in the explanatory text, EASA mentions the need for the improvement of the current air/ground communication infrastructure. EASA references the 'Future Connectivity for Aviation – FCAV' white paper, drafted by EASA, FAA, Airbus and Boeing in the fall of 2022. Even though the paper describes the need for changes quite well, it is LHG's opinion, that the paper addresses mainly the US ATM communication strategy. Compared to Europe, at this point in time, the FAA gathered no experiences in the provision of CPDLC services through the ATN network via ATN OSI protocol and neither Europe nor the US gathered experience in the application of the ATN IPS protocol. LHG sees a risk in relying on the VDL infrastructure in the future, especially when transforming it into the IPS standard. LHG believes, that EASA should include the various European Research and Development activities out of the SESAR PJ.14 solutions into their decision-making process. Furthermore, the European activities with regards to LDACS provide, from LHG point of view, additional promising outlooks for the Navigation and partly the surveillance domain, which seems to be a considerable path towards integrated CNS and should not be disregarded.

response

Noted

Please, see the response to comment #24.

comment

169

comment by: *EUROCONTROL*

"MUAC is concerned about mandating a technology which is completely incompatible with future systems only 4 years after the CP1/AF6 mandate as the FCAV paper foresees full B2 capability by 2032.

Creating a set of new configurations only for 4 years would incur high development costs to provide compatibility and technical feasibility on the ground, while it would seriously fragment airborne equipage for the coming decade(s) - unless the mandate already states that from 2032 the regulation applies to aircraft with a CofA before 2028 (retro-fit mandate)."



response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum design requirements needed to support compliance with CP1. A retrofit mandate cannot be established at CS-ACNS level but rather at the level of the appropriate documentation (e.g. Part-26 of Commission Regulation (EU) 2015/640 or other implementing regulation).

Please, see the response to comment #68.

3. What are the expected benefits and drawbacks of the regulatory material

p. 12

comment

3

comment by: *ETF ATM PSO*

quote : "a minimal change to the regulatory material to enable ADS-C EPP capability option is preferred", a cost oriented decision that already reduce the ambition anyway ETF-ATM support this road that is more realistic.

response

Noted

comment

42

comment by: *Paul DONNELLY*

Like other operators, we have invested significant time, resources and funding into modifying aircraft and training crew to ensure the full benefits of ATS-B2 are realised, through wider European implementation.

In mandating ATN B1 CPDLC and only the EPP part of ADS-C (instead of the full B2 package), this will lead to fragmented implementation with aircraft and operators having various possible combinations of equipage.

The ANSP will need to manage aircraft with various equipment standards, which will make coordination more complex, and may not be possible to implement.

If only CPDLC v1 is mandated, we will lose the safety and capacity benefits of CPDLC v2-v4:

- with the push-loadable lateral route uplinks,
- increased safety factor through improved messaging,
- TBO will be limited
 - Due to instructions might have to be given via voice instead of CPDLC due to lack of some message in CPDLC v1;
 - Due to the lack of the additional ADS-C functionalities

Furthermore, we will lose the sustainability benefits in reducing track miles, time etc. which have a direct impact of fuel/ carbon.

Practical implications

Fragmented equipage: due to the lack of automation (e.g. TBO concept, monitoring time/ level values ATCOs will probably rely on basic system functionalities (EPP) to support the



	<p>majority of traffic as it's easier. This will limited use and support for TBO, creating inefficiencies.</p> <p>B1 CPDLC message set would provide limitations: aircraft without full B2 implementation, will have different messages on different aircraft (v1, v2, v4)</p> <p>Atlantic traffic implications: oceanic/ U.S. implementation of B2 would be delayed, with the oceanic environment needing to retain FANS1/ A CPDLC as opposed to B2 which provides an extended message set.</p> <p>Safety/performance improvements: we will lose the benefits of CPDLC v2/v4 with the push-loadable lateral route uplinks.</p> <p>TBO will be limited: the majority of instructions will be provided via voice instead of CPDLC. Voice channels will become congested and are also not suitable to passing long complex clearances.</p> <p>Increased Enroute delays: The full implementation would allow for network capacity increases and efficiencies at the individual aircraft and network level. Anything less than full implementation will lead to smaller capacity increases and therefore more delays than expected with the introduction of the new technology.</p>
response	<p>Noted</p> <p>This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1. If additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level.</p> <p>EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities beyond the ADS-C EPP minimum requirements. Please, see GM2 ACNS.B.DLS.001.</p> <p>Furthermore, EASA will also support applicants that use ED-228A/ED-229A or later acceptable standards revisions.</p> <p>Please, see the response to comment #68.</p>
comment	<p>51 comment by: <i>Air France</i></p> <p>European datalink history is a series of delays, discontinuities, fragmentation, temporary solutions, technical adaptations and, last but not least, successive retrofits and costs for airlines.</p> <p>History shows that all adaptations, like on-board backward compatibility mechanisms, causes operational issues that we have to solve with new retrofits again, and new costs again.</p> <p>Since CP1 regulation discussions and issuance in 2021, we have been supporting a Full ATS B2 introduction, avoiding any temporary standards or “craft” solutions, together with a synchronized and harmonized air/ground deployment.</p> <p>We can agree with the idea that some ATS B2 applications, such as D-TAXI, are not mature enough to be used in the coming years, and are then no time critical. We could basically consider that delays and costs to implement these applications are useless with regards to CP1 requirement.</p>



However, we have no commitment, and no way to check that costs for airlines for linefit implementation of only ADS-EPP will be significantly lower than those for Full B2. We even believe that, in total, they could be higher in the end: ADS-C EPP implementation requires changes at FMS level, which are expected to be the most important part of ATS B2 avionic implementation costs. What we know is that, surely, airlines will be asked to retrofit again to implement postponed ATS B2 applications.

Most significant example is CPDLC V2. MUAC already makes use of ATN B2, operationally demonstrating maturity of ADS-C EPP. Based on their experience of actual flights equipped with full ATS B2, MUAC strongly recommends usage of CPDLC V2 together with ADS-C EPP. CPDLC V2 allows more complex clearances with extended messages integration in avionics, route clearance loading in FMS, but also reduction of flight crew workload. We fully agree with this.

A key benefit of CPDLC V2 is to allow the automatic upload of complex clearances into the FMS. If some aircraft are delivered from 2028 with only ADS-C EPP, the complex clearances available in CPDLC V1 will have to be noted by crew, and inserted manually in the FMS. We see here a significant flight safety risk. Note that CPDLC V2 introduces also new messages, opening new opportunities. Moreover, if aircraft are delivered with only ADS-C EPP, without CPDLC V2, in 2028, we may not expect a deployment of CPDLC V2 before years, with extra costs. Finally, with low implementation of CPDLC V2, some ATC centers may not implement associated functions, causing new problems of fragmentation, reduce TBO implementation perimeter and benefits. This would result in a new postponement of European ATM automation.

Another example is DCL. We have been operating FANS 1/A DCL in the US since years with outstanding results. On top of operational advantage of continuity between DCL and CPDLC en Route (same logon, same perimeter, user adherence, etc...), FAA has demonstrated benefits of DCL (cf DCOM). We use outdated ACARS PDC through in Europe. We believe switching to ATN B2 DCL will ease digital operations, and facilitate de-fragmentation.

We then support the implementation of Full ATS B2 to support ADS-C EPP CP1 requirement.

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1. The requirement for retrofit has not been established yet. Any subsequent regulatory effort will be made in conjunction with the current or future editions of the European Plan for Aviation Safety (EPAS).

If additional DL capabilities are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level.

EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities beyond the ADS-C EPP minimum requirements. Please, see GM2 ACNS.B.DLS.001.



Furthermore, EASA will also support applicants that use ED-228A/ED-229A or later acceptable standards revisions.
Please, see also the response to comment #68.

comment

52

comment by: *Air France*

Partial ATS B2 implementation for some aircraft types or manufacturers, out of current approved standards, will introduce parallel branches in avionics batches, which will be complex to track and manage for airlines: Flight ops and maintenance documentation, flight plan codes (new "European" specific code?), etc... Our experience of avionics parallel branches shows that later convergence to single common standard can rarely be met, and brings induced effect, due to mixability and interchangeability constraints. As an example, we may reach situations where FMS evolutions could not be implemented on some aircraft due to ATS B2 divergences (new functions only offered on Full ATS B2 and not on "old ADS-C EPP only). We believe starting implementing "mitigated B2 standard" is the best way to experience new datalink headaches for airlines in a short future.

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1. If additional DL capabilities are required to be mandated to support certain type of operations, such need should be reflected at implementing regulation level.
EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities beyond the ADS-C EPP minimum requirements. Please, see GM2 ACNS.B.DLS.001.
Furthermore, EASA will also support applicants that use ED-228A/ED-229A or later acceptable standards revisions.
Please, see the response to comment #68.

comment

53

comment by: *Air France*

CS-ACNS shall clearly state that B1/B2 backwards compatibility must not be implemented on-board, but on ground.
Our B1/B2 experience shows that on-board mechanism causes operational issues and datalink disconnections.
This is not clear in the NPA proposal.

response

Noted



B2/B1 backwards compatibility is proposed in the detailed specifications for DL ground systems in DS-GE.CER/DEC Issue 1.

comment

87

comment by: *Dassault-Aviation*

- The CS-ACNS should more explicitly define the ADS-C version and messages set to be supported.

response

Accepted

GM1 ACNS.B.DLS.001 has been changed to clarify that applicability refers to CPDLC Version 1 and ADS-C Version 1.

comment

170

comment by: *EUROCONTROL*

Has there been a study estimating the implementation cost which resulted in limiting ourselves to ATN B1 CPDLC implementation with its known problems (HF, performance, etc.) while a better technology is already available and used by hundreds of airframes without known safety issues (CPDLC v2)?

response

Noted

Please, see the response to comment #68.

4. Proposed regulatory material

p. 13

comment

238

comment by: *Fintraffic Air Navigation Services*

Fintraffic ANS foresees that the proposed amendment NPA 2023-07 would cause unwanted consequences for overall development of CPDLC usage.

EASA's proposal will lead to reduced capacity increases and also make ground-ground coordination much more complex, maybe even impossible and costly.

Fintraffic ANS would prefer this implementation would contain full ATS B2 employment with B2 CPDLC and full ADS-C together which in our opinion would bring higher level of safety, capacity and automation.

response

Noted

Please, see the response to comment #68.



comment	<p>262</p> <p style="text-align: right;">comment by: ATR</p> <p>Section 2.3 “Assessment of the issue” states: [QUOTE] <i>Aircraft operators are affected by the AF6 CP1 requirements when performing general air traffic (GAT) flights in accordance with instrument flight rules (IFR) above FL 285 within the Single European Sky (SES).</i> [UNQUOTE]</p> <p>It is thus recommended to also amend the requirement “CS ACNS.A.GEN.005 Definitions”, within Subpart A of CS-ACNS, as follows:</p> <ul style="list-style-type: none"> • Add ADS-C definition • Clarify the ADS-C flight envelope limitation (above FL 285), as already done for RVSM flight envelope for example. <p>In addition, in consistency with existing “AMC1 ACNS.E.RVSM.035 Altimetry system accuracy; (b) RVSM Flight envelopes boundaries (Full and Basic)” it is also recommended to incorporate the ADS-C flight envelope limitation (above FL 285) <u>in the proposed AMC</u>.</p> <p>This will enable keeping an overall consistency within CS-ACNS and clarifying the scope of applicability without any ambiguity for DOA holders and aircraft operators.</p>
response	<p>Partially accepted</p> <p>CS ACNS.A.GEN.005 <i>Definitions</i> has been changed accordingly. However, there is no need to refer to FL285 in CS-ACNS, as the applicability is defined in Commission Implementing Regulation (EU) 2023/1770.</p>

CS ACNS.B.DLS. B1. 001 Applicability	p. 14
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comment	<p>1</p> <p style="text-align: right;">comment by: <i>spai</i></p> <p>The limitaiton to ATS B2 EPP only is a step back in the whole document. B2 will be necessary for the safe and effcient provision of Air Traffic services in the future</p>
response	<p>Noted</p> <p>Please, see the response to comment #68.</p>
comment	<p>54</p> <p style="text-align: right;">comment by: <i>Air France</i></p> <p>We support Full ATS B2 in CS-ACNS, in accordance with aready approved standards. For clarity reason, this comment is valid for all SECTION 2, but not repeated for each requirement</p>
response	<p>Noted</p>



Please, see the response to comment #68.

comment

110

comment by: *Lufthansa Group***ATS B2 CPDLC (version 2)**

the updated CS/ ACNS describes the requirements to integrate ADS-C EPP as part of the ED-228A standard and leaves the CPDLC minimum standard in the version 1 according to ED-110B (option 1). LHG recognizes that this description is in line with the requirements from the AF6 part of CIR 2021/116 commonly known as CP1 regulation. Despite that, LHG sees a number of advantages in the Implementation of the full ATS B2 stack in accordance with ED-228A (option 2):

- The provision of the updated CPDLC message set is the logical step towards automation in ATM
- It is our understanding, that one of the goals of the ADS-C EPP implementation is closing the communication loop between air and ground for complex clearances supported by the ATS B2 standard but not ATN B1
- The European Multilink Roadmap and the 'Future Connectivity for Aviation – FCAV' white paper foresee an ATS B2 integration by 2032, meaning, that for Airspace Users, by 2032 a further system upgrade of the CP1 compliant aircraft would be required or we would introduce another fleet inhomogeneity reducing the acceptance of the ATS B2 CPDLC application
- All aircraft types would follow the same strategy and provide the same services, Airbus integrated into their A320family and A330 aircraft. The remaining four years until the functionality is mandated for line fit, from our perspective should be sufficient for manufacturers to integrate the full ATS B2 package.

response

Noted

Please, see the response to comment #68.

comment

115

comment by: *EUROCONTROL*

"ATN B1 and ATS B2 limited to the provision of ADS-C EPP" is ambiguous and could be interpreted to exclude CPDLC.

Suggested replacement: "ATN B1 and ADS-C EPP ATS B2 provisions"

response

Partially accepted

GM1 ACNS.B.DLS.001 has been changed to clarify that applicability refers to CPDLC Version 1 and ADS-C Version 1.

Nonetheless, ATS B2 installations with capability beyond ADS-C EPP may be voluntarily pursued by applicants.

Please, see the response to comment #68.



comment 116 comment by: EUROCONTROL

Why is DLIC not mentioned for the ATN B1 datalink installations.

Note the full name of ACL: ATC Clearances and Information

response Partially accepted

GM1 ACNS.B.DLS.001 states that ‘The context management (CM) application and the DLIC service are prerequisites for the initiation of CPDLC and ADS-C applications’, which is applicable to B1.

GM1 ACNS.B.DLS.001 has been revised to state ATC Clearances and Information.

comment 213 comment by: General Aviation Manufacturers Association / Hennig

Editorial:

In reviewing the amendments to CS-ACNS, GAMA notes that some references to ED Documents and specific sections identify the section(s) after the ED Document while other amendments identify the ED document and then the section(s) (e.g., compare CS ACNS.B.DLS.097 ADS-C EPP safety and performance with AMC1 ACNS.B.DLS.077 ADS-C EPP messages).

Recommend editorial review for consistency unless the difference is intentional.

response Accepted

CS-ACNS has been updated to ensure the appropriate level of consistency.

comment 220 comment by: Boeing

The Boeing Company Comments to EASA NPA 2023-07 Datalink Services

COMMENT #1 of 14			
Type of comment (check one)	Non-Concur	Substantive X	Editorial
Affected paragraph and page number	Pages: 14 Paragraph: CS ACNS.B.DLS.B1.001 Applicability		
What is your concern and what do you want changed in this paragraph?	<p>THE PROPOSED TEXT STATES: This section provides the airworthiness standards for ATN B1 and ATS B2 limited to the provision of ADS-C EPP</p> <p>REQUESTED CHANGE: This section provides the airworthiness standards for ATN B1 and ATS B2 limited to the provision of ADS-C EPP.</p>		



Why is your suggested change justified?	JUSTIFICATION: By limiting the implementation to only ADS-C EPP, there is very limited operational benefit.
response	<p>Not accepted</p> <p>Nonetheless, GM1 ACNS.B.DLS.001 has been changed to clarify that applicability refers to ADS-C Version 1 limited to the provision of ADS-C EPP.</p> <p>Furthermore, please refer also to the response to comment #68.</p>

comment	<p>288 comment by: <i>General Aviation Manufacturers Association / Hennig</i></p> <p>EASA states correctly in CS ACNS.B.DLS.001 Applicability that:</p> <p>"This section provides the airworthiness standards for ATN B1 and ATS B2 limited to the provision of ADS-C EPP."</p> <p>Stakeholders should recognise that limiting the implementation to only ADS-C only as opposed to ATS B2 broader provisions will result in minimal and possibly de minimis operational benefits to operators, air traffic system, and the environment.</p>
response	<p>Noted</p> <p>Please, see the response to comment #68.</p>

GM1 ACNS.B.DLS. B1 001 Applicability	p. 14
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comment	<p>221 comment by: <i>Boeing</i></p>			
COMMENT #2 of 14				
Non-Concur	<table border="1" style="width: 100%;"> <tr> <td style="width: 33%;">Substantive</td> <td style="width: 33%; text-align: center;">X</td> <td style="width: 33%;">Non-Concur</td> </tr> </table>	Substantive	X	Non-Concur
Substantive	X	Non-Concur		
<p>Page: 14 Paragraph: GM1 ACNS.B.DLS.001 Applicability</p>				
<p>THE PROPOSED TEXT STATES: ATN B1 data link installations referred to in this section (Section 2) support the data link services ‘ATC Communications Management’ (ACM), ‘ATC Clearances’ (ACL) and ‘ATC Microphone Check’ (AMC), through the CPDLC application.</p> <p>REQUESTED CHANGE: ATN B1 or ATS B2 data link installations referred to in this section (Section 2) support the data link services ‘ATC Communications Management’ (ACM),</p>				



	<p>'ATC Clearances' (ACL) and 'ATC Microphone Check' (AMC), through the CPDLC application.</p> <p>JUSTIFICATION: B1 and B2 installations should be supported by the ATS units, understanding that at present only the existing set of data link services are supported.</p>
response	<p>Not accepted</p> <p>Nonetheless, GM1 ACNS.B.DLS.001 has been changed to clarify that applicability refers to ADS-C Version 1 limited to the provision of ADS-C EPP.</p> <p>Furthermore, please refer also to the response to comment #68.</p>

comment	<p>242 comment by: Airbus-Regulations-SRg</p> <p>p14, GM1 ACNS.B.DLS.001 Applicability, last sentence AND "Rationale", quote: "The context management (CM) application and the DLIC service are pre-requisites for the initiation of CPDLC and ADS-C applications."</p> <p>"Rationale To provide guidance in particular on the pre-requisites needed for the initiation of CPDLC and ADS-C applications." UNQUOTE</p> <p>PROPOSED TEXT: Modify the last sentences to read: The context management (CM) application and the DLIC service are pre-requisites for the <u>ground</u> initiation of CPDLC and ADS-C applications <u>connections</u>.</p> <p>Modify the "Rationale" to read: To provide guidance in particular on the pre-requisites needed for the <u>ground</u> initiation of CPDLC and ADS-C applications <u>connections</u>.</p> <p>RATIONALE: The "initiation of both CPDLC and ADS-C applications" is always on ground initiative, i.e., CPDLC and ADS-C connections are never aircraft-initiated, but are always ground-initiated. The WG78/SC214 had extensive discussions regarding this topic, and clarified the industry standards (revision B) where necessary to avoid any confusion (e.g. in DLIC-IR 1 interpretation). Thus, the sentence should be clarified as the initiation of CPDLC and ADS-C application is not at aircraft level.</p> <p>As a consequence, modify the rationale too.</p>
response	<p>Partially accepted</p>



The sentence has been changed to refer to 'connections'.

GM1 ACNS.B.DLS. B1. 005 Data Link System Installation

p. 15

comment 32

comment by: ENAIRE

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
15	GM1 ACNS.B.DLS.B1.005 Data Link System Installation	Rationale To introduce minor changes to make the guidance material less focused on ATN VDLM2 network/subnetwork.	Rationale To introduce minor changes to make the guidance material less focused on ATN VDLM2 network/subnetwork.	ENAIRE doesn't support this rationale. Aircraft operators and ANSPs have made a huge effort in the last 10 years to be VDLM2 equipped. Usually, avionics equipment is designed for a long period of time, ca., 20-30 years. This rationale doesn't help but provides a negative statement over VDLM2, which could be misinterpreted. Additionally, backwards compatibility shall always be ensured to avoid any sort of negative impact on end-users, namely, aircraft



				operators, ANSPs and CSPs.
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response Accepted

GM1 ACNS.B.DLS.005 does not exclude VDLM2 as a subnetwork.

Furthermore, AMC1 ACNS.B.DLS.005 has been added to highlight that installations based on VDLM2 continue to be acceptable data link installations.

comment 214 comment by: IATA

This material refers to VHF radios with Mode 2 capabilities. How is it contemplating the potential situation (that could appear in the near term) where the aircraft is equipped also with SATCOM system(s) for the purpose of supporting continental datalink for ATS?

Could this situation require additional requirements similar to those in CS ACNS.B.DLS.B1.015 Dual Data Link Capabilities (e.g regarding selection of the radio link etc...)?

response Noted

Although AMC1 ACNS.B.DLS.005 has been added to highlight that DL VDLM2 based installations are acceptable, SATCOM installations have been already accepted by EASA by using other certifications means. CS-ACNS will be updated at the next opportunity to reflect the SATCOM link used to provide the required ATC services.

comment 243 comment by: Airbus-Regulations-SRg

P15, GM1 ACNS.B.DLS.005 Data Link System Installation, 5th bullet

PROPOSED **TEXT** :

An adequate source for conducted flight plan information and predictions (~~Departure Airport, Destination Airport, Estimated Time of Arrival~~)

e.g. Flight Management System (FMS);

RATIONALE:

With the introduction of the B2 ADS-C EPP transmission, the FMS needs to provide many more parameters than the Departure & Destination Airports which were needed in the scope of the B1 DLIC (CM) application. 4D predictions along the whole flight plan must be transmitted, made up of a large quantity of information/data.

As a consequence, it is proposed to remove the parentheses for this bullet, as it can lead the reader into thinking that this list is exhaustive.



	It is also proposed to add “and predictions” after “flight plan information” to better highlight the need for predictive data, coming from the introduction of B2 ADS-C EPP transmission.
response	Partially accepted GM1 ACNS.B.DLS.B1.005 has been changed to add trajectory intent and other minor changes.
comment	264 comment by: DGAC FR (Mireille Chabroux) VDLM2 is not anymore the only certified technology to provide ATN B1 and ATS B2 services, since certification of the IRIS service provider and the first Airbus IRIS airborne equipment DGAC-FR suggests to add a reference to IRIS/Satcom airborne equipment as a new possible way to implement ATN B1 and ATS B2 services
response	Noted SATCOM installations have been already accepted by EASA using other certifications means. CS-ACNS will be updated at the next opportunity to reflect the SATCOM link used to provide the required ATC services.

CS ACNS.B.DLS. B1. 010 Flight Deck Interface

p. 15

comment	117 comment by: EUROCONTROL Propose to specifically clarify in point (2) that it refers to datalink ATS provider(s) (2) for the flight crew to know in real time the identifier of the <u>datalink</u> ATS provider(s) and the established ADS contracts connecting with the aircraft;
response	Partially accepted The text referred to in this comment is in fact associated with point (3). Please, see the response to comment #245.
comment	171 comment by: EUROCONTROL "(3) MUAC would like to be explained the rationale why must the flight crew know about the established ADS-C contracts (event, demand, periodic) and how does the changing number, type and eventually content of the established ADS-C contract influence flight crew workload. What is the expected benefit of knowing about all the contracts? At any given moment multiple ATSU's can connect to the same aircraft and ask for different kind of data through different contracts. Any ATSU can initiate periodic, event and demand contracts. Real-time display of contract types does not bring anything to the flight crew and is



not in line with the original idea of ADS-C usage leaving the human element out of the loop to decrease workload.

Pilot input through the Eurocontrol Operational Focus Group: ""Knowing about ADS-C contracts would be a lot of information that could increase our workload. However, there are some areas, where it is ""easier"" and ""more comfortable"" for us, if we know, that we have a positive connection with specific ANSPs. Sometimes, we do not get contact with e.g. Kolkatta on HF and VHF frequencies. A positives connection would help to know, that they are aware of our position and we usually ""interpret"" it as being ok to enter their airspace even without a positive identification. Not an issue in Europe, of course, but in many other places like Iran, India, Pakistan etc.""

MUAC proposal: for the flight crew to know in real time the identifier of the ATS providers connected to the aircraft."

response Partially accepted
Please, see the response to comment #245.

comment 244 comment by: Airbus-Regulations-SRg

P15: CS ACNS.B.DLS.010 Flight Deck Interface, (a) (2), quote:
"for the flight crew to initiate **and to terminate** the data link services **and to terminate ADS-C connections;**"
UNQUOTE

PROPOSED **TEXT:**
Text to be modified as such:
for the flight crew to initiate the DLIC Logon, **and** to terminate ~~the data link services~~ CPDLC connections and to terminate ADS-C connections;

RATIONALE:
The only datalink service the flight crew can initiate is the DLIC logon. Other services based on CPDLC and ADS-C are ground-initiated.
The flight crew cannot initiate the CPDLC connection(s) (and the flight crew cannot initiate ADS-C connections).
The flight crew can only terminate the CPDLC connections and the ADS-C connections. Considering this technical statement, it is proposed to reword the (a) (2) (see above).

response Accepted
CS ACNS.B.DLS.010 has been changed accordingly.

comment 245 comment by: Airbus-Regulations-SRg

P15: CS ACNS.B.DLS.010 Flight Deck Interface, (a) (3), quote:



"for the flight crew to know in real time the identifier of the ATS provider(s) and the established ADS contracts connecting with the aircraft;"
UNQUOTE

PROPOSED**TEXT:**

Text to be modified as such :

for the flight crew to know in real time the identifier of the [CPDLC](#) ATS provider(s) and the established [ADS-C contracts connecting connections](#) with the aircraft;

RATIONALE:

The text of the (a) (3) is ambiguous. It can make readers think that the ADS-C contract types for each ADS-c Connection must be provided to the flight crew awareness. It is useless. The ADS-C application is seamless for the flight crew.

The flight crew does not need to know which type of contracts (on-demand, periodic, on-event) are requested by the ground system/the controller. The only thing that the flight crew may know is the name of the ATSU which requested an ADS-C connection with the aircraft system. As such, the flight crew is able to terminate this ADS-C connection, when necessary (e.g., if requested by the CDA (using voice or CPDLC). Considering this technical and operational statement, it is proposed to reword the (a) (3) (see above).

response

Accepted

CS ACNS.B.DLS.010 has been changed accordingly.

comment

265

comment by: *DGAC FR (Mireille Chabroux)*

Second paragraph:

Wording is unambiguous because ADS-C connections are established in order to provide a part of the set of datalink services. The mention "terminate D/L services" seems therefore sufficient

DGAC-FR suggests to delete "... and to terminate ADS-C connections.":

(2) for the flight crew to initiate and to terminate the data link services ~~and to terminate ADS-C connections;~~

response

Not accepted

It is preferred to be more specific. CS ACNS.B.DLS.010 has been nonetheless redrafted.

Flight crew should be able to only terminate the ADS-C connection, and cannot initiate the ADS-C connection. Please, see the responses to comments #244 and #245.



comment	<p>64 comment by: <i>European Business Aviation Association</i></p> <p>Deployment of VDL2 (EC 29-2009) has highlighted that the ATS traffic was negatively affected by the AOC one, this has even imposed the deployment of multifrequency, but unfortunately this has not fixed the issue. The today VDL2 communications do not respect the Cs xx.1309.</p> <p>The NPA paragraph "<i>AMC1 ACNS.BDLS.010Flight Deck interface</i>" is referring to the CS xx.1309 and so is requesting that mandated traffics (ATS, AIS) will not be perturbed by not mandated ones (AOC). What measures EASA will put in place to guaranty that the ATS traffic will not be perturbed by the AOC one. In the "<i>EASA-FAA white paper on future connectivity</i>" (<i>Annex D – Transition roadmap</i>) it is indicated:</p> <p><i>"1. From 2027: * All B2-capable aircraft to be equipped line-fit with VDL2 and 1.a. Performance Class B SATCOM or 1.b. AOC traffic is moved over non-safety link (cabin SATCOM / A2G)."</i></p> <p>--> There is a need to clarify the paragraph and to indicate in what conditions AOC traffic can be maintained on the VDL2. There is doubt that if AOC restrictions on VDL2 is limited to the B2 aircraft, this will fix the issue.</p>
response	<p>Noted</p> <p>The scope of the subject amendment to CS-ACNS (Issue 5) is only to provide the minimum DL capability to support compliance with CP1. The issues described should be considered within the next DLS regulatory effort.</p> <p>Please, see the response to comment #278 for further information on future regulatory activities.</p>
comment	<p>78 comment by: <i>Collins Aerospace</i></p> <p><u>Misalignment with the Future Connectivity WP:</u></p> <p>Ref § " Flight crew control and display of data link messages should satisfy integrity and interface design criteria appropriate for the intended purpose. Reference to the applicable CS xx.1309 requirements should be observed.":</p> <p>As this paragraph of the NPA calls the CS.25.1309, we assume that one of the concerns expressed here is the full separation of AOC and ATC traffic (meaning AOC traffic will never negatively impact the ATC Communication).</p> <p>The Future Connectivity WP makes the following statement in Annex D – Transition Roadmaps - Page 64 -> Item #3: "<i>Ensure sufficient Safety link(s) availability, performance and capacity</i>" à Actions "<i>From 2027: All B2-capable aircraft to be equipped line-fit with VDL2 and 1.a. Performance Class B SATCOM OR 1.b. AOC traffic is moved over non-safety link (cabin SATCOM / A2G)</i>".</p> <p>As previously stated, we are very concerned by the impact of AF6 on the VDL Network and we don't believe a critical mass of Aircraft equipped with IRIS SATCOM will be in operation to offload the VDL Network from 2027.</p>



response	<p>On the other hand, if the alternate foreseen solution is 1.b "AOC Traffic moved over Non-Safety Link", there is no content explaining how the Communication Management Unit (Airborne) and the Ground Counterparts will move the AOC Traffic over non-Safety Links (What are the Conditions / Criteria? Is it 100% of the AOC traffic moved to non-safety links? VDL Network dedicated to ATC Traffic only?).</p> <p>Noted</p> <p>Please, see the response to comment #278.</p>
comment	<p>88 comment by: Dassault-Aviation</p> <p>Text: "Flight crew control and display of data link messages should satisfy integrity and interface design criteria appropriate for the intended purpose. Reference to the applicable CS xx.1309 requirements should be observed."</p> <p>Comment: If the considered issue is perturbation of DL exchanges by AOC, there is a need to fix the issue at a global level and clarify how AOC traffic can be maintained on the VDL2.</p>
response	<p>Noted</p> <p>Please, see the response to comment #278.</p>
comment	<p>118 comment by: EUROCONTROL</p> <p>Consider :</p> <p>overall crew flight deck design philosophy</p>
response	<p>Accepted</p> <p>AMC1 ACNS.B.DLS.010 has been changed accordingly.</p>
comment	<p>119 comment by: EUROCONTROL</p> <p>Bullet c)</p> <p>Consider:</p> <p>"from the ATS" -> "from the ATSU"</p>
response	<p>Accepted</p> <p>AMC1 ACNS.B.DLS.010 has been changed accordingly.</p>
comment	<p>120 comment by: EUROCONTROL</p>



	<p>page 17</p> <p>To clarify “Means should be provided for the flight crew to create, store, retrieve, edit, delete, and send data link messages.”</p> <p>Why should be possible to delete messages that have been sent or received?</p>
response	<p>Noted</p> <p>The text ‘Means should be provided for the flight crew to create, store, retrieve, edit, delete, and send data link messages.’ supports the usual message preparation, such as ‘delete’.</p>
comment	<p>121 comment by: EUROCONTROL</p> <p>page 17 Propose to delete paragraph starting “Data link messages from the ATS...” as it repeats bullet (c)</p>
response	<p>Accepted</p> <p>AMC1 ACNS.B.DLS.010 has been changed accordingly.</p>
comment	<p>172 comment by: EUROCONTROL</p> <p>"It is recommended to require automation support (eg. warning, countdown) to the flight crew to execute conditional clearances eg. AT TIME (time) CLIMB FL (level) in the interests of safety and flight crew workload reduction.</p> <p>It is recommended to add the requirement of responding to ATS messages with minimal interaction (eg. display the message with not more than 2 button presses, in order to avoid scenarios like with some ATN B1 implementation which require the pilot to press 4 buttons only to display the message; these legacy implementations seriously increase flight crew workload in busy environments and slows down response time).</p> <p>It is recommended to add the requirement of a first visual then only in the absence of pilot action (e.g. button press) aural warning of a new message to avoid unnecessary distractions such as controlled crew rest disturbances or the aural warnings coinciding with standard radio transmissions (eg. ""ding"" for CURRENT ATC UNIT/STATE PREFERRED LEVEL at the same time when the ATCO identifies the aircraft as the message might be triggered on the ATCO's ""assume/accept"" input - this is a common complaint in the IFALPA CPDLC study from Boeing flight crew)"</p>
response	<p>Partially accepted</p> <p>The proposed updates to AMC1 ACNS.B.DLS.B1.010 are already covered by the following: ‘Flight crew control and display of data-link-related information (connectivity status, outstanding messages, etc.) should be consistent with the overall flight deck design</p>



philosophy. Audible and visual indications should be given by the data link system for each uplinked ATS message, including those messages not displayed immediately because of the lack of crew response to an earlier ATS message. Visual alerts alone may be used for non-ATS messages.'

Further, they are also covered in the change described in the response to comment #173.

Please, see the response to comment #278 for considering other requests for improvement.

comment

173

comment by: EUROCONTROL

page 17

"If a message intended for visual display is greater than the available display area and only part of the message is displayed, a visual indication shall be provided to the pilot to indicate the presence of remaining message."

"It is recommended to add the requirement that the flight crew should not be able to respond to the message until the last remaining part of the message is displayed - this is to help misunderstanding when only the first part of a concatenated clearance is executed due to the second part being on the next page.

Example: FLY HEADING 060 + CLIMB FL320, where only the fly heading part is executed despite the WILCO confirming both elements."

response

Partially accepted

Point (e) of AMC1 ACNS.B.DLS.010 has been added:

'(e) If only part of the message is displayed, a visual indication should be provided to the pilot to indicate the presence of remaining message.'

Further changes should be considered as part of future rulemaking activity.

Please, see the response to comment #278.

comment

273

comment by: DGAC FR (Mireille Chabroux)

New flight deck interface specifications supporting ADS-C added in CS ACNS.B.DLS.010 are not addressed in the associated AMC1 (i.e. capability to terminate ADS-C connections).

response

Noted

As CS ACNS.B.DLS.010 specifies the ADS-C capabilities, there should be no need for an AMC on ADS-C connection.

AMC1.ACNS.B.DLS. B1. 015 Dual Data Link Capabilities (Dual stack)

p. 17

comment

122

comment by: EUROCONTROL



Editorial correction :

“the alerting scheme evaluate to ensure ...” -> “the alerting scheme should be evaluated to ensure ...”

response Accepted

AMC1 ACNS.B.DLS.015 has been changed accordingly.

comment 123 comment by: EUROCONTROL

Propose to clarify in point (3) page 18:

“... to ensure that a/c does not hold two simultaneous active CPDLC connections with the same ATSU (Current Data Authority)”

(Note: A 2nd connection with the NDA is allowed)

response Partially accepted

AMC1 ACNS.B.DLS.015 has been revised to clarify the situation where an aircraft can have two simultaneous CPDLC connections.

comment 174 comment by: EUROCONTROL

page 18

"ED-228A/B does not bind the CPDLC message UM230 IMMEDIATELY to any performance requirements as it can also be used in a continental environment. MUAC proposes to specify the flight crew requirements to execute a CPDLC message received which is concatenated with the UM230 IMMEDIATELY in continental (RCP130) environment."

response Noted

CPDLC should be used for routine, non-critical and non-urgent situations. This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1.

Please, see the response to comment #278 for future rulemaking activities.

comment 222 comment by: Boeing

COMMENT #3 of 14			
Type of comment (check one)	Non-Concur	Substantive	Editorial
		X	
Affected paragraph and page number	Page: 17 Paragraph: AMC1.ACNS.B.DLS.015		



<p>What is your concern and what do you want changed in this paragraph?</p>	<p>THE PROPOSED TEXT STATES: “FANS 1/A differentiates messages alerting between normal and Urgent. Upon receipt of a high alert CPDLC message, the data link system should indicate it to the flight crew.”</p> <p>REQUESTED CHANGE: Delete the proposed text.</p> <p>“FANS 1/A differentiates messages alerting between normal and Urgent. Upon receipt of a high alert CPDLC message, the data link system should indicate it to the flight crew.”</p>
<p>Why is your suggested change justified?</p>	<p>JUSTIFICATION: In accordance with EUROCAE ED-100A / RTCA DO-258A sections 4.6.5, 4.6.5.1, and 4.6.5.2, FANS-1/A avionics do not apply the Alert attribute as stated.</p>
<p>response</p>	<p>Accepted</p> <p>AMC1 ACNS.B.DLS.015 has been revised.</p>

<p>comment</p>	<p>223</p>	<p>comment by: Boeing</p>	
<p>COMMENT #4 of 14</p>			
<p>Type of comment (check one)</p>	<p>Non-Concur</p>	<p>Substantive X</p>	<p>Editorial</p>
<p>Affected paragraph and page number</p>	<p>Pages: 17, 18 Paragraph: AMC1.ACNS.B.DLS.015</p>		
<p>What is your concern and what do you want changed in this paragraph?</p>	<p>THE PROPOSED TEXT STATES: All occurrences of “ATN B1”.</p> <p>REQUESTED CHANGE: Add “ATN B1 <u>or ATS B2</u>” for all occurrences,</p>		
<p>Why is your suggested change justified?</p>	<p>JUSTIFICATION: B1and B2 installations should be supported by the ATS units. It was previously stated that at least B2 CPDLC would be supported on the ground. If that is not the case, the maturity gate will need to be revisited.</p>		
<p>response</p>	<p>Not accepted</p> <p>The intent of CS ACNS.B.DLS.015 <i>Dual DATA Link Capabilities (Dual Stack)</i> has not been changed.</p>		



comment	247	comment by: Airbus-Regulations-SRg
	Please refer to Airbus comment # 246.	
response	Noted	
	Please, see the response to comment #246.	

comment	248	comment by: Airbus-Regulations-SRg
	<p>P18: AMC1.ACNS.B.DLS.015 Dual Data Link Capabilities (Dual stack), <i>section >ATSU Connections and Handoffs: (4)<, quote:</i> Ability for flight crew to manually terminate existing connection and establish new connection, initiate a DLIC 'logon' in both directions (i.e., FANS 1/A-to-ATN B1 and ATN B1-to-FANS 1/A)." UNQUOTE</p> <p>PROPOSED TEXT: Text to be modified as such : Ability for flight crew to manually terminate existing connection and establish new connection, initiate a DLIC 'logon' in both directions (i.e., FANS 1/A-to-ATN B1 and ATN B1-to-FANS 1/A).</p> <p>RATIONALE: The only datalink service the flight crew can initiate is the DLIC logon. The flight crew can neither initiate nor establish a CPDLC connection. The flight crew can only terminate the CPDLC connections. The CPDLC connections are initiated by the ground system/controller, and the CPDLC connection is established between the ground system and aircraft system (there is no human action in the CPDLC connection establishment). Considering this technical and operational statement, it is proposed to reword the (4) item (see above).</p>	
response	Accepted	
	AMC1 ACNS.B.DLS.015 has been revised.	

comment	283	comment by: Gulfstream Aerospace Corporation
	Gulfstream Aerospace Corporation:	
	Comment: is for the following statement, "Transfer Data Authority examples (FANS 1/A ATSU to ATN B1 ATSU)"	



	<p>Rationale: Other functionality considerations should be explored</p> <p>Recommended Change: EASA should consider to be applicable to ATS B2 EPP CP1 where transfer to next ADS-C EPP authority is required.</p> <p>Section for Rationale: Add ADS-C EPP into the rationale explanation.</p>
response	<p>Not accepted</p> <p>AMC1 ACNS.B.DLS.B1.015 refers to dual data link capabilities for CPDLC and FANS 1/A to ensure a smooth transition between the two types of applications.</p> <p>ADS-C is not covered in this AMC.</p>
comment	<p>289 comment by: <i>General Aviation Manufacturers Association / Hennig</i></p> <p>While NPA 2023-07 is focused on airborne equipage standards for limited B2 EPP, it is essential that the implementation supports B1 and B2 installations by air traffic services.</p> <p>If ground services - at a minimum - do not support B2 CPDLC, the maturity gate of the deployment must be reviewed.</p>
response	<p>Noted</p> <p>DL detailed specifications for ground (DS-GE.CER/DEC Issue 1) include specifications to accommodate ATS B2 as well as ATN B1 aircraft through the backwards compatibility requirement.</p>

CS ACNS.B.DLS. B1. 015 Dual Data Link Capabilities (Dual stack)	p. 17
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comment	<p>246 comment by: <i>Airbus-Regulations-SRg</i></p> <p>P17, CS ACNS.B.DLS.015 Dual Data Link Capabilities (Dual stack) and AMC1.ACNS.B.DLS.015 Dual Data Link Capabilities (Dual stack)</p> <p>PROPOSED TEXT:</p> <p>Replace “Dual Data Link Capabilities” by “Dual Data Link CPDLC Capabilities” in the title of the CS and AMC1</p> <p>AND</p> <p>Create new CS requirement and associated AMC (title and new content adapted to the ADS-C application) for the Dual Data Link ADS-C Capabilities</p>
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	<p>RATIONALE: In the current issue 4 of CS-ACNS, the Dual datalink capability addresses only the CPDLC application. When adding the ADS-C B2 EPP capability in the next revision of the CS-ACNS , there is a new dual datalink capability for the ADS-C application. New CS requirement and associated AMC should be created to address this Dual datalink ADS-C capability. Of course, the content of the new CS and AMC addressing the Dual datalink capability for the ADS-C application is different from the content of the existing ones for CPDLC (CPDLC and ADS-C are two different applications).</p>
response	<p>Not accepted</p> <p>No new CS requirement and associated AMC are considered at the moment for ADS-C. Future updates would be considered in the next revision of CS-ACNS for DLS. Please, see the response to comment #278 for future rulemaking activities.</p>

CS ACNS.B.DLS. B1. 020 Data Link Services Capabilities	p. 18
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comment	224	comment by: Boeing																
COMMENT #5 of 14																		
<table border="1" style="width: 100%;"> <tr> <td style="width: 35%;">Type of comment (check one)</td> <td style="width: 30%;">Non-Concur</td> <td style="width: 30%;">Substantive X</td> <td style="width: 5%;">Editorial</td> </tr> <tr> <td>Affected paragraph and page number</td> <td colspan="3">Pages: 19 Paragraph: CS ACNS.B.DLS.020</td> </tr> <tr> <td>What is your concern and what do you want changed in this paragraph?</td> <td colspan="3"> <p>THE PROPOSED TEXT STATES: (e) Downlink of ADS-C EPP.</p> <p>REQUESTED CHANGE:</p> <p>(e) Downlink of ADS-C EPP.</p> </td> </tr> <tr> <td>Why is your suggested change justified?</td> <td colspan="3"> <p>JUSTIFICATION: At a minimum, the complete B2 ADS-C application (not only the EPP function) should be required because the EPP function cannot be separated from the complete B2 ADS-C application.</p> </td> </tr> </table>			Type of comment (check one)	Non-Concur	Substantive X	Editorial	Affected paragraph and page number	Pages: 19 Paragraph: CS ACNS.B.DLS.020			What is your concern and what do you want changed in this paragraph?	<p>THE PROPOSED TEXT STATES: (e) Downlink of ADS-C EPP.</p> <p>REQUESTED CHANGE:</p> <p>(e) Downlink of ADS-C EPP.</p>			Why is your suggested change justified?	<p>JUSTIFICATION: At a minimum, the complete B2 ADS-C application (not only the EPP function) should be required because the EPP function cannot be separated from the complete B2 ADS-C application.</p>		
Type of comment (check one)	Non-Concur	Substantive X	Editorial															
Affected paragraph and page number	Pages: 19 Paragraph: CS ACNS.B.DLS.020																	
What is your concern and what do you want changed in this paragraph?	<p>THE PROPOSED TEXT STATES: (e) Downlink of ADS-C EPP.</p> <p>REQUESTED CHANGE:</p> <p>(e) Downlink of ADS-C EPP.</p>																	
Why is your suggested change justified?	<p>JUSTIFICATION: At a minimum, the complete B2 ADS-C application (not only the EPP function) should be required because the EPP function cannot be separated from the complete B2 ADS-C application.</p>																	
response	Partially accepted																	



ADS-C application is ADS-C Version 1 (see GM1 ACNS.B.DLS.001 *Applicability*); nonetheless, the information provided as a minimum would be the EPP data.

comment 253

comment by: Icelandic Transport Authority

The Icelandic Transport Authority fully support concerns reported by Isavia ANS regarding the negative effect this NPA may cause on future implementation of the technology by fragmented airborne implementation with many possible data link combinations.

Isavia ANS wishes to express the following concerns with the Notice of Proposed Amendment (NPA) 2023-07 regarding data link services.

The future Air-Ground data link standard, ATS Baseline 2 Rev B as documented in Eurocae ED-228B and ED-229B, will be published in 2023. This will be supported by a corresponding update to the ICAO Global Operational Data Link (GOLD) Manual (ICAO Doc 10037). It is expected that ATS Baseline 2 Rev B will become the global standard air-ground data link application for the future.

ATS Baseline 2 (B2) introduction is on the ICAO North Atlantic Region Vision schedule for the period 2026 – 2031.

NPA 2023-07 mandates only the EPP (Extended Projected Profile) part of B2 ADS-C instead of a full ATS B2 Rev B package. The risk is that major aircraft manufacturers will only implement the minimum required capabilities resulting in fragmented airborne implementation with many possible data link combinations. Any such implementation may delay the global implementation of ATS B2 Rev B and hamper the drive towards globally harmonized air-ground data link. It is unlikely that air navigation service providers outside Europe will be able to support the data link configuration proposed by NPA 2023-07.

It should be kept in mind that ATS B2 Rev B is a key enabler in the development of Trajectory Based Operations (TBO) and includes many new features that are essential for the safety and efficiency of air traffic services globally in the future. It is essential that the development of ATS B2 Rev B by aircraft manufacturers is not delayed in any way.

Isavia ANS urges EASA to carefully weigh the NPA's effect on the global aviation community and coordinate this matter with the relevant international stakeholders (including the ICAO North Atlantic Region) before a final decision is taken.

response Noted

Please, see the response to comment #68.

comment 33

comment by: ENAIRE



Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
19	AMC1 ACNS.B.DLS.020 Data Link Capabilities	When the aircraft has no CPDLC Current Data Authority, the data link aircraft equipment should provide crew members entering an airspace of a data link equipped ATS unit with the capability to initiate a DLIC 'Logon' function (e.g. send a CMLogonRequest message) with the applicable ATS unit, in order to identify the aircraft and initiate the use of data link services.		Consider to include the scenario when the aircraft has CPDLC CDA authority in relation to other aircraft data link capabilities as CMContact in case of a NDA which has no implemented OLDI LOF message (NPA 2023-05 AMC1. GE.CER.DLS.610 DLS Equipment).

response

Noted
DS-GE.CER/DEC Issue 1, GE.CER.DLS.410 DL includes '(f) forward logon parameters.'

comment

175 comment by: EUROCONTROL
page 18
"(5) Ability for flight crew to verify current and next facility designation or name."

Recommendation: replace "designation or name" with "designation and name" in order to avoid incidents where pilots initiate logon to and start accepting clearances from a downstream ATSU, while being under control (on voice) of the upstream ATSU - due to lack of awareness of CPDLC Identifiers. It is very challenging for flight crews to figure out which ATSU has which identifier, especially when there are multiple ATSUs in the same FIR.

response

Not accepted

Industry standards should consistently reflect the need to have the 'name' as mandatory. This should be, however, considered for a future revision of CS-ACNS.

Please, see the response to comment #278 for future rulemaking activities.

comment

266 comment by: DGAC FR (Mireille Chabroux)



When CP1 AF6 is mandated, the planned European implementation (as per on-going standardisation work expected to be validated end 2023) is that ATS B2 aircraft (ADS-C/EPP equipped) will initiate Datalink connection with the new centralized Logon Service and not anymore with the first applicable ATS unit. This should be introduced in the present paragraph.

DGAC-FR suggests to add a reference to the future Datalink Logon Service to which ATS B2 aircraft should initiate connection once CP1 AF6 is applicable.

response Noted

The specifications for data link common services were not available at the time of the NPA 2023-07 consultation.

Furthermore, this amendment to CS-ACNS (Issue 5) provides the minimum specifications to support compliance with CP1.

GM1 ACNS.B.DLS. B1. 020 Data link Services Capabilities

p. 19

comment 124

comment by: EUROCONTROL

In the introductory sentence the "verified" is replaced by "representative".
The new word raises more questions than the current: 1) representative to what exactly. 2) who determines this?...

response Partially accepted

Additional information was provided. GM1 ACNS.B.DLS.020 has been changed to read: 'Datalink capabilities should be demonstrated using a representative ground data link system or a ground data link system simulator able to support the transactions and information exchanges defined in the Subpart B Section 2.'

comment 125

comment by: EUROCONTROL

The bullet list should be extended to include the EPP service.

response Accepted

GM1.ACNS.B.DLS.020 has been revised to include the downlink of ADS-C EPP.

comment 176

comment by: EUROCONTROL

"Could EASA:
- Provide the definition of ""representative ground data link system""?
- Indicate what is expected by ""should be demonstrated using..."" ? And how / when?"

response Noted



Please, see the response to comment #124.

This amendment to CS-ACNS (Issue 5) provides the minimum specifications to support compliance with CP1. Subsequent regulatory effort may include and assess recommendations, and provide additional guidance.

Please, see the response to comment #278.

comment

195

comment by: *Garmin International*

GM1.ACNS.B.DLS.020 Data Link Capabilities: Page 19

Proposed Text:

Add wording which describes the ability of the ADS-C application to receive ADS-C contracts initiating the EPP report and for the avionics to downlink the EPP report comensurate with the specification of the contract.

Justification:

There is no section (e) outlining the EPP capability.

response

Accepted

Please, see the response to comment #125.

comment

215

comment by: *IATA*

Please clarify why GM1 ACNS.B.DLS.020 does not include in its scope the demonstration of the downlink of the ADS-C EPP capabilities.

response

Noted

GM1.ACNS.B.DLS.020 has been revised to include EPP.

Please, see the response to comment #125.

comment

249

comment by: *Airbus-Regulations-SRg*

P20: GM1 ACNS.B.DLS.020 Data link Capabilities

COMMENT

Please add a new subparagraph related to “Downlink of ADS-C EPP” as it has been added in the CS ACNS.B.DLS.020: [new =] **(e) Downlink of ADS-C EPP.**

RATIONALE:

The “Downlink of ADS-C EPP” topic is missing in this GM1, while the (e) “Downlink of ADS-C EPP” has been added in the CS ACNS.B.DLS.020



response Accepted
GM1.ACNS.B.DLS.020 has been revised to include EPP.
Please, see the response to comment #125.

comment 285 comment by: *Gulfstream Aerospace Corporation*
Gulfstream Aerospace Corporation:

Comment:
Should ADS-C EPP be listed here as letter (e)?

Rationale:
If adding ADS-C EPP, a new item should be added to the list.

Recommended Change:
Add ADS-C EPP section (e)

response Accepted
GM1.ACNS.B.DLS.020 has been revised to include EPP.
Please, see the response to comment 125.

AMC1 ACNS.B.DLS. B1. 025 Protection mechanism

p. 20

comment 90 comment by: *Dassault-Aviation*
CS-ACNS should refer to ED-229B, and not ED-229A.

response Partially accepted
CS-ACNS provides the minimum certification specifications and not necessarily the latest.
GM2 ACNS.B.DLS.001 has been added to state that EASA will accept and support applications for the approval of systems offering ATS B2 data link services.
Please, see the response to comment #68.

comment 126 comment by: *EUROCONTROL*
Similarly to the wording for other references, the reference to ED-229A (3rd bullet) should indicate “where applicable for the protection mechanism (i.e. section 3.2.4 for ADS-C and section 3.3.4 for CPDLC)”



response	<p>Propose to also note which CPDLC versions are included and which are excluded.</p> <p>Partially accepted</p> <p>AMC1 ACNS.B.DLS.025 has been changed to read: 'The data-link system compliant with EUROCAE Documents ED-110B and ED-229A satisfies the requirement.'</p> <p>The CPDLC version is mentioned in updated GM1 ACNS.B.DLS.001.</p>
comment	<p>127 comment by: EUROCONTROL</p> <p>ICAO Document 9776 (<u>Second Edition</u>) and ARINC 631-67</p>
response	<p>Not accepted</p> <p>This amendment to CS-ACNS (Issue 5) provides minimum changes to support compliance with CP1. AMC1 ACNS.B.DLS.005 has been added to reflect the DL installation needs for a VDL M2 subnetwork.</p> <p>ARINC 631-6 is still an acceptable means of compliance. No justifications have been brought to the attention of EASA regarding obsolescence of ARINC 631-6.</p> <p>Furthermore, applicants that may require the use of a later acceptable amendment will address this issue with their certifying authority.</p>
comment	<p>196 comment by: Garmin International</p> <p>AMC1. ACNS.B.DLS.025 Protection mechanism - Page 20, 21</p> <p>Proposed Text:</p> <p>Either remove revision numbers to ARINC 631, or state ARINC 631-6 or later. Note that the precedent set by referencing ARINC 750 is done without a revision number.</p> <p>Justification:</p> <p>AMC1 and AMC3 of the Protection mechanism sections reference ARINC 631-6. There are later revisions of ARINC 631 which have been published. New/updated designs may not claim ARINC 631-6.</p>
response	<p>Not accepted</p> <p>Please, see the response to comment #127.</p>
comment	<p>216 comment by: IATA</p>



response

There are several references to ED-229A throughout the document. At the time that this NPA becomes an EASA Opinion, according to EUROCAE WG-78 work plan, there will be a published updated ED-229B version of the standard.

Noted

GM2 ACNS.B.DLS.001 has been added to offer the possibility to applicants to consider applying for ATS B2 DL installation applications based on ED-228A and ED-229A (or later acceptable revisions).

Please, see the response to comment #68.

comment

225

comment by: Boeing

COMMENT #6 of 14			
Type of comment (check one)	Non-Concur	Substantive X	Editorial
Affected paragraph and page number	Page: 20 Paragraph: AMC1 ACNS.B.DLS.025		
What is your concern and what do you want changed in this paragraph?	<p>THE PROPOSED TEXT STATES: “The data link system should comply with the following applicable standards: ... ARINC 631-6 for VDL Mode 2 multi-frequency operations.”</p> <p>REQUESTED CHANGE: Update ARINC 631-6 to ARINC 631-7:</p> <p>“The data link system should comply with the following applicable standards: ... ARINC 631-67 for VDL Mode 2 multi-frequency operations.”</p>		
Why is your suggested change justified?	JUSTIFICATION: ARINC 631-7 is the definitive standard for VDL Mode 2 multi-frequency operations.		

response

Not accepted

Please, see the response to comment #127.

comment

284

comment by: Gulfstream Aerospace Corporation

Gulfstream Aerospace Corporation:

Comment:



Concerns for the following, "EUROCAE Document ED-110B (references to ICAO Doc 9705 to be replaced by the equivalent ones in the ICAO Doc 9880, where applicable for the protection mechanism);"

Rationale:

Is this an addition or a note to fix the references to ICAO Doc 9880 instead?

Recommended Change:

EASA should consider an explanation for this reference.

response

Noted

The reference to ICAO documents has been removed. EUROCAE standards are expected to provide the technical elements.

AMC1 ACNS.B.DLS.025 has been changed to read: 'The data link system compliant with EUROCAE Documents ED-110B and ED-229A satisfies the requirement.'

AMC3 ACNS.B.DLS. B1. 025 Protection mechanism

p. 21

comment

128

comment by: EUROCONTROL

Update reference to ARINC 631-6..

ARINC 631-~~6~~7

response

Not accepted

Please, see the response to comment #127.

comment

226

comment by: Boeing

COMMENT #7 of 14

Type of comment (check one)	Non-Concur	Substantive	Editorial
		X	
Affected paragraph and page number	Page: 21 Paragraph: AMC3 ACNS.B.DLS.025		
What is your concern and what do you want changed in this paragraph?	<p>THE PROPOSED TEXT STATES: "Where ARINC 631-6 identifies a specific deviation from ICAO Doc 9776 (Manual on VDL Mode 2), the provisions of the former should take precedence. ARINC 631-6 also references ARINC 750 for definition of Signal Quality Parameter (SQP) levels. Measurements of SQP levels may be passed over the air-ground link as parameters in the XID exchanges."</p> <p>REQUESTED CHANGE: Update ARINC 631-6 to ARINC 631-7:</p>		



	<p>“Where ARINC 631-67 identifies a specific deviation from ICAO Doc 9776 (Manual on VDL Mode 2), the provisions of the former should take precedence. ARINC 631-6 also references ARINC 750 for definition of Signal Quality Parameter (SQP) levels. Measurements of SQP levels may be passed over the air-ground link as parameters in the XID exchanges.”</p>
Why is your suggested change justified?	JUSTIFICATION: ARINC 631-7 is the definitive standard for VDL Mode 2 multi-frequency operations.
response	<p>Not accepted</p> <p>Please, see the response to comment #127.</p>

GM1 ACNS.DLS. B1. 035 DLS system continuity p. 22

comment	<p>91 comment by: Dassault-Aviation</p> <p>CS-ACNS should refer to ED-228B, and not ED-228A.</p>
response	<p>Noted</p> <p>EASA is required to amend CS-ACNS to support the application of CP1. Such amendment represents the minimum DL capability specifications needed to support compliance with CP1.</p> <p>While the relevant specifications in ED-228A represent the minimum needed, GM2 ACNS.B.DLS.001 has been added to offer the possibility to applicants to consider applying for ATS B2 DL installation applications based on ED-228A and ED-229A or later acceptable revisions.</p> <p>Please, see the response to comment #68.</p>
comment	<p>178 comment by: EUROCONTROL</p> <p>MUAC advises to not redefine the meaning of terms which are used in global standards, as it increases the chance of misinterpretation. CS-ACNS should use the same definition and term as the standards it refers to.</p>
response	<p>Noted</p>



There may be standards where the terms 'continuity' or 'availability' may have a different meaning. Nonetheless, for the purpose of airworthiness certification, the meaning of such terms should be used as defined in CS-ACNS.

AMC1 ACNS.DLS. B1. 035 DLS system continuity

p. 22

comment	<p>129</p> <p style="text-align: right;">comment by: <i>EUROCONTROL</i></p> <p>"The loss of the data link system function is considered to be alt should minor failure condition."</p> <p>Is this statement really true in airspace regions that increasingly rely of data link to maintain capacity?</p> <p>Propose to reconsider and update.</p>
response	<p>Noted</p> <p>The loss of the data link system function, being annunciated to the flight crew, would not significantly reduce the aeroplane's safety as voice can be used.</p> <p>Furthermore, on many aircraft, the human-machine interface (HMI) does not support operations with a failure classification for the loss of the data link system function worse than minor.</p>

comment	<p>177</p> <p style="text-align: right;">comment by: <i>EUROCONTROL</i></p> <p>Could EASA provide background information on "The loss of the data link system function is considered to be a minor failure condition"</p> <p>Provide in the document the rationale behind the statement: "minor failure condition"? What does it impact?</p>
response	<p>Noted</p> <p>Please, see the response to comment #129.</p>

AMC1 ACNS.B.DLS. B1. 050 DLIC Uplink Messages

p. 23

comment	<p>92</p> <p style="text-align: right;">comment by: <i>Dassault-Aviation</i></p> <p>CS-ACNS should refer to ED-229B, and not ED-229A.</p>
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response Partially accepted

GM2 ACNS.B.DLS.001 has been added to offer the possibility to applicants to consider applying for ATS B2 DL installation applications based on ED-228A and ED-229A (or later acceptable revisions).

Please, see the response to comment #68.

comment 95 comment by: Dassault-Aviation

Shouldn't CS-ACNS require both compliance to ED-110B and ED-229A? As it is currently written, compliance can be either to ED-110B or ED-229.

response Noted

As B1 and B2 CM applications are fully compatible, there is no need to require compliance with both EUROCAE Document ED-110B Section 2.2.1 and ED-229A Section 2.4.1.

A note has been added to provide the compatibility explanation.

AMC1 ACNS.B.DLS. B1. 055 DLIC Downlink Messages

p. 23

comment 94 comment by: Dassault-Aviation

CS-ACNS should refer to ED-229B, and not ED-229A.

response Noted

GM2 ACNS.B.DLS.001 has been added to offer the possibility to applicants to consider applying for ATS B2 DL installation applications based on ED-228A and ED-229A (or later acceptable revisions).

Please, see the response to comment #68.

comment 96 comment by: Dassault-Aviation

Shouldn't CS-ACNS require both compliance to ED-110B and ED-229A? As it is currently written, compliance can be either to ED-110B or ED-229.



response Noted
Please, see the response to comment #95.

CS ACNS.B.DLS. B1. 050 DLIC Uplink Messages

p. 23

comment 130 comment by: EUROCONTROL
User Abort and Provider Abort functions should also be included

response Not accepted
The standard is inconclusive if the CM User Abort and CM Provider Abort are mandatory functions.
This amendment to CS-ACNS (Issue 5) only ensures the minimum specifications to support compliance with CP1. Further improvements should be addressed at a later stage in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).

comment 179 comment by: EUROCONTROL
Replace the "DLIC Logon function" by "DLIC initiation function" (which is implemented by CM Logon) according to ED228A.

response Not accepted
'DLIC Logon' and 'DLIC Initiation' cover the same function.

CS ACNS.B.DLS. B1. 055 DLIC Downlink Messages

p. 23

comment 131 comment by: EUROCONTROL
User Abort and Provider Abort functions should also be included

response Not accepted
Please, see the response to comment #130.

comment 180 comment by: EUROCONTROL
Replace the "DLIC Logon function" by "DLIC initiation function" (which is implemented by CM Logon) according to ED228A.



response Not accepted
Please, see the response to comment #179.

CS ACNS.B.DLS. B1. 070 CPDLC uplink messages

p. 24

comment 132 comment by: EUROCONTROL
Propose to address existing inconsistency:

The DLIC requirements (CS ACNS.B.DLS.050 etc) specify functions. For CPDLC, the equivalent functions should be specified:
CPDLC Start request uplink and CPDLC Start response downlink
CPDLC Message request uplink and downlink
CPDLC End request uplink and CPDLC End response downlink
CPDLC User and Provider Aborts
(DSC and CPDLC Forward functions are excluded).

response Not accepted
Current CS ACNS.B.DLS.070 text supports ATN B1 and is not changed by the NPA.

This amendment to CS-ACNS (Issue 5) only ensures the minimum specifications to support compliance with CP1. Further improvements should be addressed at a later stage in accordance with current and future editions of the European Plan for Aviation Safety (EPAS).

comment 227 comment by: Boeing

COMMENT #8 of 14		
<i>Non-Concur</i>	<i>Substantive</i>	<i>Editorial</i>
	X	
Pages: 24, 25 Paragraph: CS ACNS.B.DLS.070		
THE PROPOSED TEXT STATES: Table of B1 CPDLC uplink messages.		
REQUESTED CHANGE: Add additional applicable B2 CPDLC uplink messages.		
JUSTIFICATION: At present, only the existing set of data link services are supported. However, B1 and B2 installations should be supported by the ATS units.		
For CS ACNS.B.DLS.070, replace the two columns of messages with the below.		
ID ED-110B/ED-228A	Message ED-110B/ED-228A	



UM0/UM0	UNABLE/UNABLE
UM1/UM1	STANDBY/STANDBY
UM3/UM3	ROGER/ROGER
UM4/UM4	AFFIRM/AFFIRM
UM5/UM5	NEGATIVE/NEGATIVE
UM19/UM19	MAINTAIN [level]/ MAINTAIN [level]
UM20/UM20	CLIMB TO [level]/ CLIMB TO [level]
UM23/UM23	DESCEND TO [level]/ DESCEND TO [level]
UM26/UM26R	CLIMB TO REACH [level] BY [time]/ CLIMB TO REACH [level single] BEFORE TIME [time]
UM27/UM27R	CLIMB TO REACH [level] BY [position]/ CLIMB TO REACH [level single] BEFORE PASSING [position ATW]
UM28/UM28R	DESCEND TO REACH [level] BY [time] / DESCEND TO REACH [level single] BEFORE TIME [time]
UM29/UM29R	DESCEND TO REACH [level] BY [position] / DESCEND TO REACH [level single] BEFORE PASSING [position ATW]
UM46/UM46R	CROSS [position] AT [level]/ CROSS [position ATW] AT [level]
UM47/UM47R	CROSS [position] AT OR ABOVE [level]/ CROSS [position ATW] AT OR ABOVE [level single]
UM48/UM48R	CROSS [position] AT OR BELOW [level]/ CROSS [position ATW] AT OR BELOW [level single]
UM51/UM51R	CROSS [position] AT [time]/ CROSS [position ATW] AT TIME [RTAtimesec]
UM52/UM52R	CROSS [position] AT OR BEFORE [time]/ CROSS [position ATW] BEFORE TIME [RTAtimesec]
UM53/UM53R	CROSS [position] AT OR AFTER [time]/ CROSS [position ATW] AFTER TIME [RTAtimesec]
UM54/UM54R	CROSS [position] BETWEEN [time] AND [time] / CROSS [position ATW] BETWEEN TIME [RTAtimesec] AND TIME [RTAtimesec]
UM55/UM55R	CROSS [position] AT [speed] / CROSS [position ATW] AT [speed]
UM61/UM61R ¹	CROSS [position] AT AND MAINTAIN [level] AT [speed]/ CROSS [position ATW] AT [level] AT [speed]
UM64/UM64R ¹	OFFSET [specifiedDistance] [direction] OF ROUTE/ OFFSET [specifiedDistanceR] [direction side] OF ROUTE
UM72/UM72	RESUME OWN NAVIGATION/ RESUME OWN NAVIGATION
UM74/UM74R	PROCEED DIRECT TO [position]/ PROCEED DIRECT TO [positionR]
UM79/UM79R	CLEARED TO [position] VIA [routeClearance]/ CLEARED TO [positionR] VIA [departureDataO][routeClearanceR]



UM80/UM80R	CLEARED [routeClearance]/ CLEARED [departureDataO][routeClearanceR] [arrivalApproachData]
UM82/UM82R	CLEARED TO DEVIATE UP TO [specifiedDistance] [direction] OF ROUTE/ CLEARED TO DEVIATE UP TO [lateralDeviation] OF ROUTE
UM92/UM92R	HOLD AT [position] AS PUBLISHED MAINTAIN [level]/ AT [positionR] HOLD [directionCompassO] AS PUBLISHED
UM94/UM94R	TURN [direction] HEADING [degrees]/ TURN [directionSide] HEADING [degrees]
UM96/UM96	CONTINUE PRESENT HEADING/ CONTINUE PRESENT HEADING
UM106/UM106	MAINTAIN [speed]/ MAINTAIN [speed]
UM107/UM106	MAINTAIN PRESENT SPEED/ MAINTAIN PRESENT SPEED
UM108/UM108	MAINTAIN [speed] OR GREATER/ MAINTAIN [speed] OR GREATER
UM109/UM109	MAINTAIN [speed] OR LESS/ MAINTAIN [speed] OR LESS
UM116/UM116R	RESUME NORMAL SPEED/ RESUME NORMAL SPEED [flightPhaseO]
UM117/UM117R	CONTACT [unitname] [frequency]/ CONTACT [unitnameR] [frequencyO]
UM120/UM120R	MONITOR [unitname] [frequency]/ MONITOR [unitnameR] [frequencyO]
UM123/UM123	SQUAWK [code]/ SQUAWK [code]
UM133/ n/a ²	REPORT PRESENT LEVEL / <no equivalent>
UM148/UM148R	WHEN CAN YOU ACCEPT [level]/ WHEN CAN YOU ACCEPT [level single]
UM157/UM157R	CHECK STUCK MICROPHONE [frequency] / CHECK STUCK MICROPHONE [frequencyO]
UM159/UM159R	ERROR [errorInformation]/ ERROR [errorInformationR]
UM162/UM162	SERVICE UNAVAILABLE/ SERVICE UNAVAILABLE
UM165/ n/a ³	THEN / <no equivalent>
UM171/UM171	CLIMB AT [verticalRate] MINIMUM/ CLIMB AT [verticalRate] MINIMUM
UM172/UM172	CLIMB AT [verticalRate] MAXIMUM/ CLIMB AT [verticalRate] MAXIMUM
UM173/UM173	DESCEND AT [verticalRate] MINIMUM/ DESCEND AT [verticalRate] MINIMUM
UM174/UM174	DESCEND AT [verticalRate] MAXIMUM/ DESCEND AT [verticalRate] MAXIMUM
UM179/UM179	SQUAWK IDENT/ SQUAWK IDENT
UM183/UM183	[freetext]/ [freetext]
UM190/UM190	FLY HEADING [degrees]/ FLY HEADING [degrees]
UM196/UM196	[freetext]/ [freetext]
UM203/ n/a ³	[freetext]/ <no equivalent>
UM205/UM205	[freetext] / [freetext]
UM211/UM211	REQUEST FORWARDED/ REQUEST FORWARDED



UM213/UM153R ⁴	[facilitydesignation] ALTIMETER [altimeter] / [facilitydesignationO] ALTIMETER [altimeterSetting] (ALTIMETER TIME [timeO])
UM215/UM215R	TURN [direction] [degrees] / TURN [directionSide] [numberOfDegrees] DEGREES
UM222/UM222	NO SPEED RESTRICTION / NO SPEED RESTRICTION
UM231/UM231	STATE PREFERRED LEVEL / STATE PREFERRED LEVEL
UM232/ n/a ²	STATE TOP OF DESCENT / <no equivalent>
UM237/UM237	REQUEST AGAIN WITH NEXT UNIT / REQUEST AGAIN WITH NEXT UNIT
UM160/UM160	NEXT DATA AUTHORITY [facility] / NEXT DATA AUTHORITY [facility]
UM227/UM227	LOGICAL ACKNOWLEDGEMENT / LOGICAL ACKNOWLEDGEMENT
<p>Notes:</p> <p>1= Incorrect in NPA; yellow highlight shows what it should be</p> <p>2=Message deemed obsolete due to ADS-C</p> <p>3= Removed message</p> <p>4= UM213 was removed from ED-228A</p>	
response	<p>Partially accepted</p> <p>UM61 has been corrected. In this amendment, CS-ACNS remains focused on ATN B1 for CPDLC.</p> <p>Recognising the need for DL installations to evolve, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities to the DL installation or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.</p> <p>Please, see the response to comment #68.</p>

CS ACNS.B.DLS. B1. 060 DLIC initiation when in 'CPDLC inhibited' state (uplink) p. 24

comment	<p>181 comment by: EUROCONTROL</p> <p>It is recommended that the flight crew should receive a notification of the DLIC contact request. Experience shows that many flight crews inhibit CPDLC before critical phases of the flight as per company SOPs. However, due to the high pace of operations aircraft are not always shut down completely between two flights and the datalink system stays inhibited typically for the rest of the day.</p>
response	<p>Noted</p>



This amendment to CS-ACNS (Issue 5) only provides the minimum specifications to support compliance with CP1. Further improvements should be addressed at a later stage in accordance with current and future editions of the European Plan for Aviation Safety (EPAS). Please, see the response to comment #278.

AMC1 ACNS.B.DLS. B1 .070 CPDLC uplink messages p. 25

comment 133 comment by: EUROCONTROL

Propose to discuss with EASA the references for ASN and syntax
Version 2 of ICAO Doc 9880 is not containing all information and ED110B is not having the correct version.
Doc 9880 version 1 contained the full material which was reduced in version 2 with expectation to be covered in other docs, but this has not yet happened.

response Noted

References to ICAO Doc 9705 regarding syntax have been removed from AMC1 ACNS.B.DLS.B1.070 CPDLC as they are referred to in EUROCAE ED-110B. A note has been added.
Please, see the response to comment #112.

comment 134 comment by: EUROCONTROL

Second para omits 'W/U' response. Add text:
"Received uplink messages with the response type 'W/U' indicated in the 'Response' column should be responded to with either DM0 (WILCO), DM2 (STANDBY) or DM1 (UNABLE)."

response Not accepted

The responses to those messages indicated with W/U in the response column are already provided in ED-110B. Please, see the response to comment #228.

comment 228 comment by: Boeing

COMMENT #9 of 14		
Non-Concur	Substantive	Editorial
	X	
Page: 25 Paragraph: AMC1 ACNS.B.DLS.070		
THE PROPOSED TEXT STATES: "The data link system should prepare the appropriate response downlink message to a received uplink message in compliance with EUROCAE Document ED-110B, Section 2.2.3.3, Table 2-4. Received uplink messages with the response type 'A/N' indicated in the 'Response' column should be responded to with		



either DM2 (STANDBY), DM4 (AFFIRM) or DM5 (NEGATIVE). Received uplink messages with the response type ‘R’ indicated in the ‘Response’ column should be responded to with either DM2 (STANDBY), DM3 (ROGER) or DM1 (UNABLE).”

REQUESTED CHANGE: Add a sentence to the proposed text to address the omitted W/U response type:

“The data link system should prepare the appropriate response downlink message to a received uplink message in compliance with EUROCAE Document ED-110B, Section 2.2.3.3, Table 2-4. Received uplink messages with the response type ‘A/N’ indicated in the ‘Response’ column should be responded to with either DM2 (STANDBY), DM4 (AFFIRM) or DM5 (NEGATIVE). Received uplink messages with the response type ‘R’ indicated in the ‘Response’ column should be responded to with either DM2 (STANDBY), DM3 (ROGER) or DM1 (UNABLE). Received uplink messages with the response type ‘W/U’ indicated in the ‘Response’ column should be responded to with either DM0 (WILCO), DM1 (UNABLE), or DM2 (STANDBY).”

JUSTIFICATION: The proposed text omits the W/U response type from the list of response types, which is required by EUROCAE ED-110B / RTCA DO-280B Section 2.2.3.3 Table 2-4 and Section B.4.1.2.7 Table M-5.

response

Not accepted

This is already covered by ED-110B.

AMC1 ACNS.B.DLS.070 has been revised to remove details that already exist in ED-110B.

comment

229 comment by: Boeing

COMMENT #10 of 14		
Non-Concur	Substantive	Editorial
	X	
Pages: 25 Paragraph: AMC1 ACNS.B.DLS.070		
THE PROPOSED TEXT STATES: The data link system should...EUROCAE Document ED-110B, Section 3.3.7.6.		
REQUESTED CHANGE: When referring to ED-110B in this paragraph, ED-229A should also be added:		
The data link system should...EUROCAE Document <u>s</u> ED-110B, Section 3.3.7.6 <u>and ED-229A.</u>		



JUSTIFICATION: At present, only the existing set of data link services are supported. However, B1 and B2 installations should be supported by the ATS units.

response Not accepted

AMC1 ACNS.B.DLS.070 refers to CPDLC messages, which are defined in ED-110B.

Recognising the need for DL installations to evolve, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities to the DL installation or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Please, see also the response to comment #68.

comment 250

comment by: *Airbus-Regulations-SRg*

P25, AMC1 ACNS.B.DLS.070 CPDLC uplink messages, 3rd section

PROPOSED

replace "~~CS-ACNS.B.DLS.050~~" by "[CS ACNS.B.DLS.B1.070](#)"

TEXT:

RATIONALE:

Editorial error in CS requirement reference

response Accepted

AMC1 ACNS.B.DLS.B1.070 has been revised accordingly.

GM1 ACNS.B.DLS. B1. 070 Uplink Messages

p. 26

comment 56

comment by: *Air France*

We recommend to include CPLDC V2 in CS-ACNS (see comment 51 chapter 3 for further explanations)

Already today in 2023, MUAC proposes complex clearances only on aircraft logged B2. It will not work neither with B1 aircraft, nor with "proposed ADS-C EPP only" aircraft.

Some CPDLC V2, already used today are missing in this V1 list (UM74R, UM266, etc...)

response Not accepted

This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1. If additional DL capabilities (beyond ADS-C EPP) are required to be



mandated to support certain types of operations, such need should be reflected at implementing regulation level.

Recognising the need for DL installations to evolve, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities to the DL installation or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Please, see the response to comment #68.

comment

230

comment by: Boeing

COMMENT #11 of 14		
Non-Concur	Substantive	Editorial
	X	
Pages: 26,27 Paragraph: GM1 ACNS.B.DLS.070		
THE PROPOSED TEXT STATES: The table includes ED-110B Uplink messages.		
REQUESTED CHANGE: ED-229A messages should be added.		
JUSTIFICATION: At present, only the existing set of data link services are supported. However, B1 and B2 installations should be supported by the ATS units.		

For GM1 ACNS.B.DLS.070:

First paragraph, change “...ED-110B, Section 2.2.3, and...” to “...ED-110B, Section 2.2.3, **ED-228A, Section 5**, and...”

Second paragraph, change “...ED-110B, Section 2.2.3.3, Table 2-4.” to “...ED-110B, Section 2.2.3.3, Table 2-4 **and ED-228A, Section 5.2.1, Table 5-5.**”

Third paragraph, change “...EUROCAE Document ED-110B, Section 3.3.7.6” to “...EUROCAE Document ED-110B, Section 3.3.7.6 **and ED-228A, Sections 5.2.6, 5.2.8 and 5.2.9**”

Replace the first two columns of the table GM1 ACNS.B.DLS.070 Uplink Messages with the above table. The rightmost 3 columns do not change.

response

Not accepted

As this amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1, GM1 ACNS.B.DLS.070 refers only to CPDLC messages defined in ED-110B.



Nonetheless, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities to the DL installation or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Please, see the response to comment #68.

CS ACNS.B.DLS. B1. 075 CPDLC downlink messages

p. 27

comment 234

comment by: Boeing

For CS ACNS.B.DLS. 075 CPDLC downlink messages, replace table with the following:

ID	Message
ED-110B/ED-228A	ED-110B/ED-228A
DM0 / DM0	WILCO / WILCO
DM1 / DM1	UNABLE / UNABLE
DM2 / DM2	STANDBY / STANDBY
DM3 / DM3	ROGER / ROGER
DM4 / DM4	AFFIRM / AFFIRM
DM5 / DM5	NEGATIVE / NEGATIVE
DM6 / DM6	REQUEST [level] / REQUEST [level]
DM18 / DM18	REQUEST [speed] / REQUEST [speed]
DM22 / DM22R	REQUEST DIRECT TO [position] / REQUEST DIRECT TO [positionR]
DM32 / n/a ¹	PRESENT LEVEL [level] / <no equivalent>
DM62 / DM62R	ERROR [errorInformation] / ERROR [errorInformationR]
DM63 / DM63	NOT CURRENT DATA AUTHORITY / NOT CURRENT DATA AUTHORITY
DM65 / DM65R	DUE TO WEATHER / DUE TO [specifiedReasonDownlink]
DM66 / DM65R	DUE TO AIRCRAFT PERFORMANCE / DUE TO [specifiedReasonDownlink]
DM81 / DM81R	WE CAN ACCEPT [level] AT [time] / WE CAN ACCEPT [level single] AT TIME [time]



DM82 / DM82R	WE CANNOT ACCEPT [level] / WE CANNOT ACCEPT [levelSingle]
DM98 / DM98	[freetext] /[freetext]
DM99 / DM99	CURRENT DATA AUTHORITY / CURRENT DATA AUTHORITY
DM100 / DM100	LOGICAL ACKNOWLEDGEMENT / LOGICAL ACKNOWLEDGEMENT
DM106 / DM106R	PREFERRED LEVEL [level] / PREFERRED LEVEL [levelSingle]
DM107 / DM107R	NOT AUTHORIZED NEXT DATA AUTHORITY / NOT AUTHORIZED NEXT DATA AUTHORITY [CDA][NDAO]
DM109 / n/a ¹	TOP OF DESCENT [time] / <no equivalent>

Notes:
1= Message deemed obsolete due to ADS-C

response Not accepted

CS ACNS.B.DLS.075 refers to CPDLC messages defined in ED-110B. This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1.

EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Please, see the response to comment #68.

AMC1 ACNS.B.DLS. B1. 075 Downlink messages p. 28

comment	135	comment by: EUROCONTROL
	See comment on page 25 Propose to discuss with EASA the reference to ICAO Doc 9880 version 2	
response	Noted Please, see the response to comment #112.	
comment	235	comment by: Boeing
	For AMC1 ACNS.B.DLS. 075 CPDLC downlink messages, replace table with the following:	



First paragraph, change “...ED-110B, Section 2.2.3, and...” to “...ED-110B, Section 2.2.3, **ED-228A, Section 5**, and...”

Second paragraph, change “...ED-110B, Section 2.2.3.3, Table 2-4.” to “...ED-110B, Section 2.2.3.3, Table 2-4 **and ED-228A, Section 5.2.1, Table 5-5.**”

Replace the first two columns of the table GM1 ACNS.B.DLS.075 Dowlink Messages with the above table. The rightmost 3 columns do not change.

response

Not accepted

AMC1 ACNS.B.DLS.075 refers to CPDLC messages defined in ED-110B. This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1.

EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Please, see the response to comment #68.

AMC1 ACNS.B.DLS.077 ADS-C EPP messages	p. 29
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comment

14

comment by: *Honeywell*

Rev B of the ED-228 and ED-229 should be defined as applicable for all new programs launched after this year's publication of Rev B. Rev A should only be retained as acceptable for aircraft certification programs completed or launched before Rev B publication.

response

Not accepted

This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1.

Nonetheless, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Please, see the responses to comments #113 and #68.

comment

97

comment by: *Dassault-Aviation*

CS-ACNS should refer to ED-228B, and not ED-228A.

response

Noted

This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1.



Nonetheless, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Please, see the responses to comments #113 and #68.

comment

183

comment by: EUROCONTROL

"Regarding ""The data link system should comply with EUROCAE Document ED-228A [...] the exchange of EPP.""

--> Why is it a should?

--> ""the exchange of EPP"" should be replaced by ""the exchange of ADS-C Reports.""

"Consider replacing should by shall
+ Correct wording"

response

Not accepted

This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1. The scope of CP1 is the downlink of ADS-C / EPP, which is expressed in CS-ACNS by the generic term 'exchange of EPP data'.

AMC is soft law and 'should' is typically used in AMC to reflect that it represents a means but not the only means to comply with a requirement.

comment

198

comment by: Garmin International

AMC1 ACNS.B.DLS.077 ADS-C EPP messages: Page 29

Proposed Text:

Provide wording which allows Rev A or later of ED-228 and ED-229.

Justification:

It is understood that implementations compliant with the Rev A or Rev B versions of ED-228 and ED-229 equipment will be accepted. As the Rev B version of the standards are expected to be published in 2023, new equipment is expected to be build to these standards. Existing systems built to Rev A standards are expected to continue to be allowed.

response

Partially accepted

This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1. Nonetheless, EASA will support applicants that may voluntarily choose



to add more ATS B2 capabilities or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.
Please, see the responses to comments #68 and #113.

comment

232

comment by: Boeing

COMMENT #13 of 14		
Non-Concur	Substantive	Editorial
	X	
Page: 29 Paragraph: AMC1 ACNS.B.DLS.077		
<p>THE PROPOSED TEXT STATES: “The data link system should comply with EUROCAE Document ED-228A, Sections 6.1 and 6.2 and EUROCAE ED-229A, Sections 3.2 and 5.3 to support the exchange of EPP.”</p> <p>REQUESTED CHANGE:</p> <p>“The data link system should comply with EUROCAE Document ED-228A, Sections 6.1 and 6.2 and EUROCAE ED-229A, Sections 3.2 and 5.3 to support the exchange of EPP B2 ADS-C data.”</p> <p>JUSTIFICATION: At a minimum, the complete B2 ADS-C application (not only the EPP function) should be required because the EPP function cannot be separated from the complete B2 ADS-C application.</p>		

response

Partially accepted

The ADS-C application version is defined in GM1 ACNS.B.DLS.001 *Applicability*. This application version is ADS-C Version 1, as defined in ED-229A.

However, CP1 only requires that ADS-C EPP data be transmitted by the aircraft.

Please, see the response to comment #258.

comment

251

comment by: Airbus-Regulations-SRg

P29, AMC1 ACNS.B.DLS.077 ADS-C EPP messages

COMMENT:

Replace reference of ~~ED-228A~~ by [ED-228 Revision A or B](#)



and replace ~~ED-229A~~ by [ED-229 Revision A or B](#)

RATIONALE:

As Revision B of ED-228 and ED-229 is going to be published in September 2023 it would be suitable to include this revision as an acceptable standard in the NPA.

NOTE: References also to be updated in chapter 7 References, p40, bullets 5 & 6.

response

Partially accepted

This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1. Nonetheless, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Please, see the response to comment #68.

CS ACNS.B.DLS.077 ADS-C EPP Messages

p. 29

comment

15

comment by: *Honeywell*

The CS ACNS.B.DLS.077 or the related AMC1 ACNS.B.DLS.077 should contain explicit definition of the supported ADS-C messages. (Similarly to CS ACNS.B.DLS.070 & 075 where supported CPDLC messages are explicitly listed.) From current wording it's not clear if only EPP-related ADS-C messages need to be supported or if the complete ASN.1 spec needs to be supported. If full ADS-C message set is to be supported, then the CS ACNS.B.DLS.077 should explicitly specify ADS-C version (and/or ED-229 section) and state that full ASN.1 message set for that version shall be supported. If only a subset of ADS-C is acceptable, then the requirement should define at least:

- a. Which ASN.1 contract requests should be supported (DemandContractRequest, EventContractRequest, PeriodicContractRequest)
- b. For each ASN.1 contract request, which options should be supported (e.g. for DemandContractRequest: projected-profile, ground-vector, air-vector, met-info, extended-projected-profile, toa-range, speed-schedule-profile)

If applicable any lower-level ASN.1 exemptions should also be listed. (E.g. along the lines of: *"The following ASN.1 items are not required to comply with the mandate: ADSEmergencyUrgency, MetInfo/turbulence, MetInfo/humidity..."*)

response

Partially accepted

CS ACNS.B.DLS.077 has been revised to specify the types of contract requests. Some clarifications have also been added.

The applicable sections of EUROCAE documents are mentioned in AMC1 ACNS.B.DLS.077 to support the exchange of EPP data (Demand Contract, Event Contract, Periodic Contract).



comment	57	comment by: <i>Air France</i>
	Fully agree to refer to ED-228A.	
	We should not wait for availability of ED-229B	
	This comment is valid for any reference to ED-228A in the NPA	
response	Noted	
	Please, see also the response to comment #68.	

comment	108	comment by: <i>Lufthansa Group</i>
	ED-228A vs. ED-228B	
	LHG follows the update progress of the EUROCAE ED-228 and ED-229 documents from revision A to revision B. LHG acknowledges, that the Rev B will introduce a number of functions supporting more automation and further improvement of flight operations and Air Traffic Management. Our understanding is, that the publication of Revision B could be too late to be integrated into the CS/ACNS, especially with regards to the industrialization target date for AF6 of the CP1 regulation but LHG would appreciate a timely assessment of the introduced changes and elaboration of the path forward by an appropriate RMG, e.g. RMT.0524	
response	Noted	
	Recognising the need for DL installations to evolve, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities to the DL installation or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.	
	Furthermore, regulatory activity on DLS will continue in accordance with the current and future editions of the European Plan for Aviation Safety (EPAS). Please, see the response to comment #278.	
	Please, see also the response to comment #68.	

comment	137	comment by: <i>EUROCONTROL</i>
	Add new bullet (3 rd): “- establishing and terminating ADS-C Contracts (demand, periodic, event)”	
response	Partially accepted	
	CS ACNS.B.DLS.077 has been revised to specify the types of contract requests. Furthermore, please also note that relevant requirements to establish and terminate ADS-C contracts are defined in CS ACNS.B.DLS.010 and CS ACNS.B.DLS.020.	

comment	182	comment by: <i>EUROCONTROL</i>
	"Incorrect wording regarding:	



"ADS-C EPP MESSAGES"
 "receiving and processing ADS-C EPP requests;"
 "ADS-C EPP reports"

"Replace ""ADS-C EPP MESSAGES"" by ""ADS-C messages""
 Replace ""ADS-C EPP requests"" by ""ADS-C Contract Requests""
 Replace ""ADS-C EPP reports"" by ""ADS-C Contract reports"" "

response

Partially accepted

CS ACNS.B.DLS.077 has been revised to specify the types of contract requests. Further clarifications on the EPP downlink have also been provided. It should be noted that only the downlink of EPP data is required by CP1.

comment

197 comment by: *Garmin International*

CS ACNS.B.DLS.077 ADS-C EPP Messages :Page 29

Proposed Text:

- receiving and processing ADS - C EPP contract requests; and
- preparing and sending ADS-C EPP reports according to the ADS-C **contracts**

Justification:

The term "requests" would be more appropriate to include the term "contract".

response

Accepted

CS ACNS.B.DLS.077 has been revised.

Please, see also the response to comment #182.

comment

231 comment by: *Boeing*

COMMENT #12 of 14		
Non-Concur	Substantive	Editorial
	X	
Page: 29		
Paragraph: CS ACNS.B.DLS.077		
<p>THE PROPOSED TEXT STATES: "The data link system is capable of: - receiving and processing ADS-C EPP requests; and - preparing and sending ADS-C EPP reports according to the ADS-C requests."</p>		



<p>REQUESTED CHANGE: Change the two instances of “ADC-C EPP” in the proposed text to “B2 ADS-C”:</p> <p>“The data link system is capable of: - receiving and processing ADS-C EPP B2-ADS-C requests; and - preparing and sending ADS-C EPP B2-ADS-C reports according to the ADS-C requests.”</p>
<p>JUSTIFICATION: At a minimum, the complete B2 ADS-C application (not only the EPP function) should be required because the EPP function cannot be separated from the complete B2 ADS-C application.</p>

response

Partially accepted

CS ACNS.B.DLS.077 has been revised to provide further clarifications. The ADS-C application version is specified in GM1 ACNS.B.DLS.001.

Nonetheless, only the downlink of EPP data is required by CP1. Please, see also the response to comment #182.

comment

233

comment by: Boeing

COMMENT #14 of 14			
Type of comment (check one)	Non-Concur	Substantive X	Editorial
Affected paragraph and page number	Pages: 29 Paragraph: CS ACNS.B.DLS.077		
What is your concern and what do you want changed in this paragraph?	<p>THE PROPOSED TEXT STATES: The data link system is capable of: - receiving and processing ADS-C EPP requests; and - preparing and sending ADS-C EPP reports according to the ADS-C requests.</p> <p>REQUESTED CHANGE: The data link system is capable of: - supporting the EPP reports and event functionality, - receiving and processing ADS-C EPP requests; and - preparing and sending ADS-C EPP reports according to the ADS-C requests.</p>		
Why is your suggested change justified?	<p>JUSTIFICATION: At a minimum, the complete B2 ADS-C application (not only the EPP function) should be required because the EPP function cannot be separated from the complete B2 ADS-C application.</p>		



response Partially accepted
Please, see the responses to comments #182 and #231.

comment 286 comment by: *Gulfstream Aerospace Corporation*
Gulfstream Aerospace Corporation:
Comment:
Comment on the following "preparing and sending ADS-C EPP reports according to the ADS-C requests. "
Rationale:
Where are the ADS-C EPP requests and reports' format defined?
Recommended Change:
EASA should consider adding a section to explain the formatting requirements to be followed for ADS-C EPP reports.

response Noted
AMC1 ACNS.B.DLS.077 provides the technical elements referring to EUROCAE ED-228A and ED-229A.

GM3 ACNS.B.DLS. B1. 075 Optional ACL Downlink Messages

p. 29

comment 136 comment by: *EUROCONTROL*
See comment on page 25
Propose to discuss with EASA the reference to ICAO Doc 9880 version 2

response Noted
Please, see also the response to comment #112.

comment 236 comment by: *Boeing*
For GM3 ACNS.B.DLS.075 Optional ACL Downlink Messages, replace the table with the below table.

ID	Message
	ED-110B/ED-228A



	ED-110B/ED-228A	
	DM9 / DM9	REQUEST CLIMB TO [level] / REQUEST CLIMB TO [level]
	DM10 / DM10	REQUEST DESCENT TO [level]/ REQUEST DESCENT TO [level]
	DM27 / DM27R	REQUEST WEATHER DEVIATION UP TO [specifiedDistance] [direction] OF ROUTE / REQUEST WEATHER DEVIATION UP TO [lateralDeviation] OF ROUTE
response	<p>Not accepted</p> <p>This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1. Therefore, GM3 ACNS.B.DLS.075 refers to CPDLC messages defined in ED-120.</p> <p>Nonetheless, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities to the DL installation or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.</p> <p>Please, see the response to comment #68.</p>	

GM1 ACNS.B.DLS. B1. 080 Data Link Initiation Capability (DLIC) Service p. 30

comment	138	comment by: EUROCONTROL
	Delete: ACM (Table 5-21) and ACL (Table 5-31 and Table 5-32) This section is only concerned with DLIC.	
response	Accepted GM1 ACNS.B.DLS.080 has been revised accordingly.	

AMC1 ACNS.B.DLS. B1. 080 Data Link Initiation Capability (DLIC) Service p. 30

comment	184	comment by: EUROCONTROL
	Why "should"? Consider replacing "should by shall"	
response	Noted AMC is soft law and 'should' is typically used in AMC to reflect that it represents a means but not the only means to comply with a requirement.	



comment	185	comment by: EUROCONTROL
	Why not referring to ED120 and not to ED228A for DLIC / CPDLC Performance requirements?	
	Consider referring to ATS B2 SPR (ED228A) Same question for the next requirements	
response	Not accepted	
	This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1. As such, ED-120 continues to be used to support compliance.	
	Nonetheless, EASA will support applicants that wish to apply for ATS B2 DL installations, which are based on ED-228/ED-229 Revision A or later revisions.	
	Please, see the response to comment #68.	

GM1 ACNS.B.DLS. B1. 085 ATC Communications Management (ACM) Service

p. 31

comment	139	comment by: EUROCONTROL
	Delete: DLIC (Table 4-8 and Table 4-9) and ACL (Table 5-31 and Table 5-32) This section is only concerned with ACM.	
response	Accepted	
	GM1 ACNS.B.DLS.085 has been revised accordingly.	

GM1 ACNS.B.DLS. B1. 090 ATC Clearances and Information (ACL) Service

p. 31

comment	140	comment by: EUROCONTROL
	Delete: DLIC (Table 4-8 and Table 4-9) and ACM (Table 5-21) This section is only concerned with ACL.	
response	Accepted	
	GM1 ACNS.B.DLS.090 has been revised accordingly.	

CS ACNS.B.DLS.097 ADS-C EPP safety and performance requirements

p. 32

comment	98	comment by: Dassault-Aviation
	CS-ACNS should refer to ED-228B, and not ED-228A.	



response

Noted

This amendment to CS-ACNS (Issue 5) represents the minimum changes needed to support compliance with CP1.

Nonetheless, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Please, see the responses to comments #14 and #68.

GM1 ACNS.B.DLS. B1. 100 Network Layer Requirements

p. 32

comment

141

comment by: EUROCONTROL

Delete reference to ICAO PDU (sic) M0070002 ('Interoperability impact when deflate compression is used. Non-compliance with Zlib').

This PDR is only applicable to Doc 9705 and should be incorporated into Doc 9880.

response

Not accepted

The PDR reference is kept in GM1 ACNS.B.DLS.B1.100.

Please, see the response to comment #112.

GM1 ACNS.B.DLS. B1. 105 Transport Layer Requirements

p. 33

comment

142

comment by: EUROCONTROL

Delete duplicated heading "Transport Protocol Classes"

response

Accepted

The duplicate 'Transport Protocol Classes' has been removed from GM1 ACNS.B.DLS.105.

comment

143

comment by: EUROCONTROL

Typo: "miss deliveries" -> misdeliveries

response

Accepted

'miss deliveries' has been replaced by 'misdelliveries' in GM1 ACNS.B.DLS.105.

comment

144

comment by: EUROCONTROL



	Delete reference to ICAO PDR M0040002 The PDR is only applicable to Doc 9705 and should be incorporated into Doc 9880.
response	Not accepted GM1 ACNS.B.DLS.105 has been revised to still refer to ICAO Dec 0705 as needed. Therefore, the reference to PDR M0040002 is kept. Please, see the response to comment #112.

CS ACNS.B.DLS. B1. 110 Session Layer

p. 34

comment	145 Typo: DRPSAC -> SAC	comment by: EUROCONTROL
response	Accepted 'DRPSAC' has been replaced by 'SAC' in CS ACNS.B.DLS.110.	

CS ACNS.B.DLS. B1. 120 Application Layer Requirements

p. 35

comment	146 Incorrect terminology: Replace "Convergence Function" with "Control Function"	comment by: EUROCONTROL
response	Accepted 'Convergence Function' has been replaced by 'Control Function' in CS ACNS.B.DLS.120.	

AMC1 ACNS.B.DLS. B1. 120 Application Layer Requirements

p. 36

comment	147 Incorrect terminology: Replace "Convergence Function" with "Control Function"	comment by: EUROCONTROL
response	Accepted 'Convergence Function' has been replaced by 'Control Function' in AMC1 ACNS.B.DLS.120.	

GM1 ACNS.B.DLS. B1. 120 Application Layer Requirements

p. 36

comment	148 Section is not relevant. To consider deleting whole section as irrelevant	comment by: EUROCONTROL
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response Not accepted
It is preferred to keep the layer specifications at this revision.

CS ACNS.B.DLS. B1. 125 Database

p. 36

comment 149 comment by: EUROCONTROL

Propose to emphasise the need for easy updates in NSAP the database as today there are difficulties in this area.

The Network Service Access Point (NSAP) address database is capable of being updated to ensure compliance with the applicable version of the ICAO EUR Doc 028.

response Partially accepted
GMC1 ACNS.B.DLS.B1.125 has been added: 'The NSAP address database is subject to regular update in accordance with ICAO EUR Doc 028.'

7. References

p. 40

comment 99 comment by: Dassault-Aviation

References to ED-228 and ED-229 should point out revision B.

response Noted
Please, see the response to comment #68.

comment 252 comment by: Airbus-Regulations-SRg

P40, Chapter 7 "References"

PROPOSED

remove ~~ED-122~~

Add [ED-100A](#)

TEXT:

RATIONALE:

ED-122 reference is no longer used in the CS ACNS.



	<p>While ED-100A reference is used in the AMC1.ACNS.B.DLS.015 Dual Data Link Capabilities (Dual stack).</p>
<p>response</p>	<p>Not accepted</p> <p>Appendix B with references has been removed; nonetheless, a reference to ED-122 is still present in AMC1 ACNS.B.DLS.015 <i>Dual Data Link Capabilities (Dual Stack)</i>.</p>
<p>comment</p>	<p>267 comment by: DGAC FR (Mireille Chabroux)</p> <p>Since IRIS/Satcom is now an applicable air/ground technology to provide datalink capabilities, associated standards should also be listed in the reference list</p> <p>DGAC6FR suggests to add IRIS/Satcom related standards, e.g. RTCA DO-343D/ EUROCAE ED-242C, ICAO AMS(R)S SARPs</p>
<p>response</p>	<p>Not accepted</p> <p>Appendix B with references has been removed at this amendment.</p> <p>Nonetheless, the standards to support DL installation based on IRIS/SATCOM will be considered for the next CS-ACNS DLS amendment.</p> <p>Please, see the responses to comments #25 and #278.</p>

2. What are the possible options p. 41

<p>comment</p>	<p>18 comment by: IFATCA</p> <p>IFATCA believes that Option 1 is the least difficult option to be taken at the current stage.</p> <p>a. Safety impact With Option 0, the safety risks would remain unchanged. The implementation of either Option 1 or Option 2 is expected to have a safety benefit at the airspace level.</p>
<p>response</p>	<p>Noted</p>

b. Data collection p. 41

<p>comment</p>	<p>34 comment by: ENAIRE</p>					
<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 15%;">Page</td> <td style="width: 30%;">Article/AMC/GM/CS</td> <td style="width: 30%;">Original Text</td> <td style="width: 15%;">Proposed amended text</td> <td style="width: 10%;">Rationale</td> </tr> </table>		Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale		



41	Appendix 1, 3. Methodology and data, b. data collection	Stakeholders are invited to provide any other quantitative information they deem useful to bring to the attention of EASA, to support and improve the analysis and the choice between option 1 and option 2. As a result, the relevant parts of the impact assessment may be adjusted on a case-by-case basis.	<p>ENAIRES considers that this is not the right approach. The so-called options 1 and 2 should be widely discussed in detail with all the relevant stakeholders that one way or another will be impacted by this, namely, ANSPs, AUs and aircraft and avionics manufacturers.</p> <p>It is also very important to have a clear and feasible roadmap and scope for data link implementation considering the needs from the different stakeholders in the aeronautical community. Additionally, it is also very important to consider the required investments by all the stakeholders and the potential loss of the opportunity window if we don't undertake the required actions in due time.</p>
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response Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1. If additional DL capabilities (beyond ADS-C EPP) are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level.

Recognising the need for DL installations to evolve, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities to the DL installation or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Furthermore, regulatory activity on DLS will continue in accordance with the current and future editions of the European Plan for Aviation Safety (EPAS).

Please, see the response to comment #278.



comment

111

comment by: *Lufthansa Group***ATS B2 CPDLC (version 2)**

the updated CS/ ACNS (option 1) describes the requirements to integrate ADS-C EPP as part of the ED-228A standard and leaves the CPDLC minimum standard in the version 1 according to ED-110B. LHG recognizes that this description is in line with the requirements from the AF6 part of CIR 2021/116 commonly known as CP1 regulation. Despite that, LHG sees a number of advantages in the Implementation of the full ATS B2 stack in accordance with ED-228A (option 2):

- The provision of the updated CPDLC message set is the logical step towards automation in ATM
- It is our understanding, that one of the goals of the ADS-C EPP implementation is closing the communication loop between air and ground for complex clearances supported by the ATS B2 standard but not ATN B1
- The European Multilink Roadmap and the 'Future Connectivity for Aviation – FCAV' white paper foresee an ATS B2 integration by 2032, meaning, that for Airspace Users, by 2032 a further system upgrade of the CP1 compliant aircraft would be required or we would introduce another fleet inhomogeneity reducing the acceptance of the ATS B2 CPDLC application
- All aircraft types would follow the same strategy and provide the same services, Airbus integrated into their A320family and A330 aircraft. The remaining four years until the functionality is mandated for line fit, from our perspective should be sufficient for manufacturers to integrate the full ATS B2 package.

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1. If additional DL capabilities (beyond ADS-C EPP) are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level.

Recognising the need for DL installations to evolve, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities to the DL installation or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Furthermore, regulatory activity on DLS will continue in accordance with the current and future editions of the European Plan for Aviation Safety (EPAS).

Please, see the response to comment #278.

a. Safety impact

p. 42

comment

4

comment by: *ETF ATM PSO*

The expected impact on safety will be more than minimal, you can also have an overload of work in the cockpit by the various means of communication between the ground and the air, this has already been experienced by several cockpit crews in short to medium range flight, these crews are reluctant to use the CPDLC, which is sometimes too noisy for an authorization that is not very critically useful (such as changing ATSU, maintaining the level, etc.)

response

Noted

The current use of CPDLC is not intended for non-routine, time-critical situations. Furthermore, the primary means of communication within the current context remains via voice.

comment

36

comment by: ENAIRE

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
42	Appendix 1, 4. What are the impacts, a. Safety impact	If only the ADS-C EPP downlink capability would be used, both options proposed would result in similar benefits.		Please, clarify if you refer to the implementation of ADS-C EPP within ATN-B1 or within ATS-B2. Obviously, if ADS-C is only implemented within ATS-B2, there will be no relevant advantages over ATN-B1.

response

Noted

Comparison was made only if the ADS-C EPP downlink capability would be used (as this represents the minimum required by CP1), regardless of whether or not the installation is based on ATN B1 + ADS-C EPP or ATS B2 (which includes AS-C EPP).

comment

186

comment by: EUROCONTROL

MUAC disagrees with the assessment that with option 0 safety risks would remain unchanged. Due to the increase of traffic in Europe, the ATN B1 CPDLC network's performance is already struggling due to the heavy use of the VHF Datalink Mode 2. Multi-link capabilities, such as IRIS are currently only offered to ATS B2 aircraft.

Consequently Option 0 and Option 1 would both jeopardize the performance and stability of the VDLM2 network by increasing the number of ATN B1 VDLM2 users and removing the option of using alternative media of data communication.

The use of Option 1 introduces further confusion on the ground side and unreliability with respect to aircraft capability. The introduced additional combinations were not foreseen



during the development of the ED-228/229/230/231 documents, therefore there is no assurance that these combinations will work flawlessly - which might manifest into safety issues and confusion both on the ground and in the air.

The safety benefit of Option 2 is considerably higher through replacing ATN B1 CPDLC with B2 for multiple reasons as described above (performance, messages, flight crew considerations). It has been quantified in MUAC operations, that response times of horizontal clearances on B2 aircraft are about 25% faster than on B1, which demonstrates lower flight crew workload on CPDLC v2.

Average response times(2022):

UM74 (519548 messages): 12.4 sec

UM79 (5128 messages): 21.71 sec

UM74R (20206 messages): 10.57 sec

UM79R (188 messages): 18.25 sec

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1. If additional DL capabilities (beyond ADS-C EPP) are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level.

Recognising the need for DL installations to evolve, EASA will support applicants that may voluntarily choose to add more ATS B2 capabilities to the DL installation or consider later revisions to the ED-228/ED-229 standards. Please, see GM2 ACNS.B.DLS.001.

Furthermore, regulatory activity on DLS will continue in accordance with the current and future editions of the European Plan for Aviation Safety (EPAS).

Please, see the response to comment #278.

b. Environmental impact

p. 42

comment

5

comment by: *ETF ATM PSO*

To have an effective environmental impact, the ANPS should, as soon as possible, train ATCOs to have this objective on the same level as safety and performance, otherwise the EPP will NOT be used to improve the ATM carbon footprint by the ops rooms.

response

Noted

comment

187

comment by: *EUROCONTROL*

MUAC disagrees with the assessment that Option 1 would have an equal positive environmental impact as Option 2.

Option 1 will limit the use of the whole ATS B2 capability the following ways:

- lack of CPDLC v2/4: TBO will be limited due to the already highly used voice frequencies -
- TBO instructions are not expected to be feasible to be given over voice (eg. LatLong



coordinates, complex route clearances along with speeds, required time over fix). There will also be no possibility to use closed trajectories instead of radar headings, which will result in more nautical miles flown and more emissions.

- lack of the ADS-C TOA RANGE and Speed Schedule functions: it will limit the provision of XMAN/AMAN operations to their current levels, instead of being able to use the full capabilities of aircraft. Based on MUAC experience, in general up to 2-2.5 times as much en-route delay absorption would be possible through the use of the TOA RANGE/Speed Schedule function if XMAN restrictions are applied at their current point (EGLL/EGKK at 350 nm from ADES).
- lack of the ADS-C TOA RANGE function: it would not allow controllers to check if aircraft can speed up/slow down to leave/not to enter a military area on the route, which will cause unnecessary reroutings, more nautical miles flown and more emissions.
- lack of the [Revision B] VHF Active Frequency downlink option+associated event contract: it will maintain the current risk levels of loss of communication and the subsequent environmental effects of intercepts by fighter aircraft. In case of this functionality not being implemented, no silent intra-ANSP sector transfers will be possible either, which will mean additional radio transmissions with their associated energy requirement and cost.

During the period of 2018-July 2023, MUAC has registered 281 prolonged losses of communication events and subsequently 33 interceptions of civilian aircraft. The environmental "cost" of an intercept conducted by 2*F-16 fighter jets is estimated at 30.000 kg of CO2 emitted (Source: Naval Postgraduate School Monterey, 2006). MUAC handles on average 5.000 flights a day with most flights crossing through at least 3 Maastricht sectors. This results in 3 initial calls, each with a minimum of 10 seconds RT time: $3 * 5000 * 10 = 150.000$ seconds or 41.6 hours/day of RT spent only on initial calls. If only 10% of these calls could be saved through the VHF frequency downlink, it would already result in a measurable decrease of energy used by aviation radios. Of course not of the same magnitude, the calculation based on R&S Series 5200 radios shows that reducing initial calls by 10% ($15.000 / 2$ seconds as a call consists of RX/TX part from the ground) at MUAC would translate into an approximate daily energy saving of 0.65 kWh only through the reduced use of TX power.

response

Noted

This amendment to CS-ACNS (Issue 5) only provides the minimum DL capability requirements needed to support compliance with CP1.

Please, see the responses to comments #68 and #113.

c. Social impact p. 42

comment

6 comment by: *ETF ATM PSO*

There is a social impact both in the cockpit crews and in the operations rooms (ATCOs), without the appropriate actions to manage change accordingly, technical evolutions such as ADS-C EPP will not be used with full force.

response

Noted



comment	188	comment by: EUROCONTROL
	Certain parts of the global society are less and less tolerant to the perceived environmental effect of aviation; the more aviation can do to reduce emissions the more accepted the whole industry is expected to become by society.	
response	Noted	

4. What are the impacts

p. 42

comment	35	comment by: ENAIRE
	42	Appendix 1, 4. What are the impacts
		Furthermore, AF6 CP1 maturity (industrialisation) level gate is targeted for the end of 2023. Passing such gate depends on the availability of standards (i.e., detailed specifications) including but not only limited to the CS-ACNS.
		Proposed amended text
		Rationale
		<p>ENAIRE considers that this is not the right approach. Stablished maturity level gate is not only an industrialisation definition affecting ADS-C EPP capability for aircrafts. This maturity level should also consider availability of standards (communication, interfaces, functionalities...) in order to help ANSP's to define, develop and implement on ground facilities.</p> <p>For sure that having ADS-C EPP aircrafts is a good enabler to implement ATS B2 in on-ground ATC systems. But dates, phases and mid/long-term regulations should be clear for all stakeholders (including ANSP's). And, of course, taking into account ANSP's.</p>



response

Noted

EASA is required to issue certification specifications for airborne DL installations to support compliance with CP1. Such amendment (Issue 5) only represents the minimum requirements to support compliance with CP1. As regard fulfilling the CP1 maturity gate requirements, the availability of standards is also taken into account.

comment

58

comment by: *Air France*

ADS-C EPP is already defined in an approved standard, and already operationally used with success in Europe. Industrialization gate is therefore not jeopardize by the lack of regulatory framework

response

Noted

EASA is required to issue certification specifications for airborne DL installations to support compliance with CP1. This amendment to CS-ACNS (Issue 5) provides an element to support fulfilling the CP1 maturity gate requirements.

d. Economic impact

p. 42

comment

37

comment by: *ENAIRE*

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
42	Appendix 1, 4. What are the impacts, d. Economic impact	— Option 0 would result in a misalignment with the vision in the FCAV paper.	— Option 0 would result in a misalignment with the vision in the FCAV paper.	This is irrelevant. The mentioned FCAV white paper did not include neither consider the contribution from relevant European data link stakeholders.

response

Noted

Please, see the response to comment #24.

comment

38

comment by: *ENAIRE*



Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
43	Appendix 1, 4. What are the impacts, d. Economic impact	<p>For Option 1, there will be a ‘compliance cost’ associated with designing, installing, and implementing the changes for operators of aircraft with a CofA issued on or after 31 December 2027. As the design change is limited to ADS-C EPP capability, by implementing this option, the cost may also be limited for several avionics configurations and aircraft implementations.</p> <p>For Option 2, there will be a ‘compliance cost’ associated with designing, installing, and implementing the changes for operators of aircraft with a CofA issued on or after 31 December 2027. Compared with Option 1, this option adds more capability than required by AF6 CP1. The additional capability (full ATS B2) may increase the compliance cost as more avionics units would need to be upgraded. Such additional capability is however not required by AF6 CP1, therefore the cost incurred would be disproportionate compared with the requirements of AF6 CP1.</p>		<p>ENAIRE does not agree with this approach.</p> <p>Obviously, options 1 and 2 will be more expensive for aircraft operators and for ANSPs. Furthermore, option 2 will be far more expensive than option 1.</p> <p>However, is there any reliable and wide analysis that compares the technical and economic advantages of the implementation of option 1 and 2? Do we (ANSPs and aircraft operators) have to provide such analysis as a response to this NPA? ENAIRE considers that it is too late to require something like this and it will be very difficult to come up with a precise response. Nonetheless, ENAIRE can provide a qualitative answer saying that we (aircraft operators, ANSPs, aircraft and avionics manufacturers) need to go step by step with a clear target to implement option 2 in a synchronised manner with the appropriate European funding.</p>



		<p>Stakeholders are invited to provide elements to quantify the economic impact of the options 1 or 2, or alternatively, propose other options.</p>		
response	Noted			

comment	<p>59</p> <p>There is no evidence that Option 1 costs for will be less than Option 2.</p> <ul style="list-style-type: none"> • Most of ATS B2 development costs are related to FMS interface, which is needed to implement ADS-C EPP (so needed in option 1) • Experience shows than CPLDC V2 can not be operationally de-correlated from ADS-C EPP. If we have to retrofit later to implement CPLDC V2, we can expect higher costs than implementing Option 2 since start • With Option 1, we will generate "parallel branches" of avionic configurations (see comment 52), inducing extra costs for configuration management (spares, repairs, etc...) and adverse effects (inability to introduce future FMS evolutions, costs for re-convergence to common standard, etc...) • With Option 1, ATM benefits already identified with CPDLC V2 will not be reached, causing extra costs • Please note that for some aircraft types, like on A220, which is expected to operate significant number of flights in the coming years, changes in avionics are grouped together in a combined major avionic batch. The interval between avionic batches is often 3 to 4 years. It means that with Option 1, we will not recover benefits from other ATN B2 applications (CPLDC V2) before years. • Some ATC centers already operate with full B2 aircraft. If option 1 is chosen, this will result in a new fragmentation in Europe, which we know is very costly (adaptation mechanisms to be implemented on regional basis) 	comment by: <i>Air France</i>
response	Noted	

comment	<p>60</p> <p>Option 2 : (The additional capability (full ATS B2) may increase the compliance cost as more avionics units would need to be upgraded) ...(cost incurred would be disproportionate</p>	comment by: <i>Air France</i>
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	<p>compared with the requirements of AF6 CP1) This is not demonstrated</p>
response	Noted

comment	<p>189 comment by: <i>EUROCONTROL</i></p> <p>OPTION 1: Option 1 would considerably increase costs on the ground side due to the much more complex ground implementation (to support the fragmented deployment), while it would reduce the expected benefits on the airborne side. Not even sure how feasible it will be for the ground to support fragmented avionics as well as partial ADS-C implementation.</p> <p>The largest impact on airspace users would be affecting the airlines who have already equipped their aircraft with the full ATS B2 package: due to the fragmented equipage of the rest of the airspace users, early full ATS B2 equippers would also receive a reduced service since ATC in general could not differentiate between different levels of equipage in moderate to high traffic levels. ATCOs would not be able to provide different level/quality of service to differently equipped aircraft and automation support would also be limited, which would limit further capacity increases and cause delays. The goals of harmonized global B2 implementation and all the associated benefits (eg. uniform service at intercontinental-level, ground-to-ground coordination, ease of information exchange, etc.) would be seriously hampered; it would also take additional resources both to maintain legacy systems in their entirety and to upgrade airframes in the future - this would incur costs to be paid by airspace users, ANSPs and/or States.</p> <p>In case the FAA or other licensing and certifying authorities outside Europe will not accept the partial ADS-C EPP-only+CPDLC B1 equipage, airspace users will have to invest substantial amount of money to upgrade their airframes to a level which is acceptable also outside of Europe. In case of some aircraft configurations such upgrade might not even be possible due to incompatibilities of hardware/software components.</p> <p>OPTION 2: Option 2's ""compliance cost"" would be returned in safety, operational, economic and environmental benefits on medium to long-term. Please consider this step not only for the AF6 CP1 regulation, but its impact to the rest of the world too. Going to Option 2 directly would mean that investment would be done earlier to cover the full ATS B2 (instead of partial ADS-C only), but the cost of certification / deployment only paid once as well as avionics would not need to be upgraded two times. The cost for ANSP would also go (in total) smaller than developing and deploying a system supporting fragmented avionics versions, and later on having to pay again for the upgrade to Option 2 (and still supporting the legacy versions flying around).</p> <p><u>Alternative proposal:</u></p>
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In case of time concerns the new regulation could apply similar temporary exemptions to the implementing rule as the Commission Implementing Decision (EU) 2019/2012 which introduced exemptions from the Datalink Service Implementing Regulation for certain airframes for an additional 2 year period. It is more desirable for ANSPs globally to have as few variations in equipment as possible even at the cost of a later implementation/temporary exemptions. It would also be in the interests of all airspace users through the better planning capability and possibly higher capacity increases of the ANSPs due to a more consistent set of airborne equipage.

As the mandate is forward-fit only, it fundamentally differs from the DLS IR.

Acceptable means of compliance proposal:

Between January 2028 - January 2030:

-full RevA (ADSC v1 + CPDLC v2) is acceptable for forward-fit

-exemption for airframes equipped with CPDLC v1 until January 2030

After January 2030:

-full RevB (ADSC v3 + CPDLC v4) forward-fit only

-no exemptions on forward-fit

If these options can not be selected, please consider a full-retrofit mandate for all aircraft with a CofA of 2028 or after to take effect from 2032 without any exemptions.

response

Not accepted

The changes proposed cannot be implemented at CS-ACNS or other detailed specification (DS) level. This amendment to CS-ACNS (Issue 5) would be applicable to new designs and changes to type designs, in accordance with Part 21.

Changes at implementing regulation level (e.g. Commission Regulation (EU) 2015/640 and its Annex I (Part-26)) are needed to introduce such proposed changes. Any subsequent regulatory changes should be done in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).

comment

217

comment by: IATA

“Stakeholders are invited to provide elements to quantify the economic impact of the options 1 or 2, or alternatively, propose other options.”

About the options of OEMs offering the ADS-C EPP separated from the FANS-3/C whole suite. The difference stays in the CPDLC B2. For the time being, there are a couple of SESAR Solutions, maturity V2, that have derived positive business cases for the implementation of en-route ATC SOPs based on complex CPDLC B2 clearances. It is very early to determine that the operational expected benefits will represent financial advantages. SESAR IRO2 projects will research more in the subject, and after the IR projects it is likely that DSD (demonstrators in real operational environments) will be required to validate the CPDLC B2 benefits. Therefore, at the time being, airlines should bear the costs of the mandated capability (ADS-C EPP), and those operators that decided to go for the ATS B2 suite will do it based on their own hypotheses, business cases, and strategies.



response Noted

This comment supports the approach taken in this amendment to CS-ACNS (Issue 5) to provide the minimum specifications needed to support compliance with CP1. The implementation of additional data link capabilities is voluntary.

comment 274 comment by: DGAC FR (Mireille Chabroux)

General comment: the proposed Economic Impact does not provide figures or data to rely on. As such, it is not clear how conclusions could be reached. Should an additional consultation be expected with an updated economic-impact assessment once an updated assessment is developed ?

response Noted

The assessment of the options was performed using a qualitative approach, due to the wide range of aircraft installations and avionics configurations with DL capability. The challenge to quantify the benefits was also acknowledged by stakeholders; furthermore, the additional feedback received does not change the proposed way forward.

No additional consultation is required to support the issuance of this amendment (CS-ACNS Issue 5) as this amendment introduces the minimum changes to support compliance with CP1, coupled with supporting applicants that voluntarily upgrade to ATS B2 capability.

Please, see the response to comment #68.

a. Comparison of the options p. 43

comment 7 comment by: ETF ATM PSO

Option 1 with social change management, gradually change the ATM culture to use these technologies accordingly

response Noted

comment 39 comment by: ENAIRE

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
44	Appendix 1, 5. Conclusion, a. Comparison of the options	Option 1 is also aligned with the proposals of the FCAV document.	Option 1 is also aligned with the proposals of the FCAV document.	This is irrelevant. The mentioned FCAV white paper did not include neither consider the contribution from relevant European data link stakeholders.



response

Noted
Please, see also the response to comment #24.

comment 40

comment by: ENAIRE

Page	Article/AMC/GM/CS	Original Text	Proposed amended text	Rationale
44	Appendix 1, 5. Conclusion, a. Comparison of the options	In conclusion, Option 1 is proposed as a way forward since it would achieve more efficiently the objectives of AF6 CP1.	In conclusion, Option 1 is proposed as a way forward since it would achieve more efficiently the objectives of AF6 CP1.	<p>ENAIRE does not support this statement.</p> <p>This NPA proposes changes to the Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigations and Surveillance (CS-ACNS), to support the design and production organisations and in particular the aircraft operators required to provide ADS-C EPP (Automatic Dependent Surveillance – Contract Extended Project Profile) part of ATS-B2 (ATS baseline 2), in accordance with AF6 (ATM functionality 6 – initial trajectory information sharing) of Commission Regulation (EU) 2021/116 Common Project One (CP1).</p> <p>Option 1 is the least restrictive and facilitates industry development by reducing the design requirements for CP1 AF6 compliance , in order to certify aircraft after 31 December 2027, but the level of development and planning</p>



				<p>of the other stakeholders (i.e. ANSPs) and their ground systems has not been taken into account in order to harmonize air-ground systems.</p> <p>It would be very beneficial to have the planning and level of development on ATS B2 applied to the CPDLC and ADS-C service of each actor, as a basis for the decision of the options proposed and thus be able to benefit a maximum number of them and not emperor the rest.</p>
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response

Noted

EASA is required to amend CS-ACNS to support compliance with CP1.

CS-ACNS is applicable to design and production organisations / manufactures of airborne data link systems. As such, the options reflect mainly the stakeholders to which CS-ACNS is applicable. Furthermore, this amendment (Issue 5) provides the minimum DL capability specifications needed to support compliance with CP1. Applicants may voluntarily introduce additional DL capabilities.

GM2 ACNS.B.DLS.001 has been added to state that EASA accepts and supports applications for approval of systems that offer ATS B2 data link services.

comment

70

comment by: ENAV

Considering the agreement reached in the NDTECH/NDOP about this topic in 2022, ENAV supports the proposed EASA option (Option 1).

response

Noted

comment

100

comment by: Dassault-Aviation

As above mentioned (see DA comments page 11), EPP option 1 is the option targeted to comply as much as possible to the mandate. But there are high risks not to be ready on time, considering all different aircraft types and multitude versions of avionics suites.
« Besides, for CP1, there are still technical risks associated to the DL solution, for a



workable solution at the mandate deadline.
 VDL2 maturity issues (IE: non AOC operators connection, network capacity,...), and EPP services deployment schedule and organisation on ground (ie Common service deployment) need to be fixed on time .

response Noted

comment 218 comment by: IATA

Current understanding is that Option 2, since it exceeds the minimum requirements of Option 1, is a voluntary option that still fulfills the requirements for certification with no need to resort to additional or alternative mechanisms such as special conditions. Please confirm.

Minimum requirements to fulfill option 1 scenario, with flexibility to accomodate option 2 for those who decide to follow that option, looks like a flexible scenario that still avoids an extension of the initial scope as per CP1 regulation, which could affect the stakeholders already in their way to comply with option 1.

response Noted

An aircraft configuration based on Option 2 is beyond the minimum design requirements needed to support compliance with CP1. As such, what is beyond the certification specifications contained in this amendment (CS-ACNS Issue 5) is voluntary.

comment 237 comment by: LfV

LfV prefers Option 1 or 2 as they offer a greater potential to modernize our operations in line with LfV's efforts invested in SESAR Industrial Research. LfV also notes that to date, no avionics manufacturer has signaled intent to develop equipment strictly meeting the Option 0 standard. LfV recognizes the reality that neither DLS IR nor CP1 offer a solid legal backing for anything but Option 0 but we are not in position to assess to which degree this fact presents a practical constraint on the CS-ACNS. In regards to the choice between Option 1 or 2, LfV enters a slight preference for Option 1 in order to minimize the negative consequences on the early movers, a principle which the Commission has an ambition to follow. At the same time LfV has no practical experience with either Option 1 or 2 and will defer to EASA to assess the merit of Option 2 and whether the technical advantages it offers outweigh the principle of not penalizing the early movers.

response Noted

5. Conclusion p. 43



comment

61

comment by: Air France

"Option 1 ensures that the objective of AF6 CP1 is met":

This is not correct. This configuration is not based on an approved standard and has never been tested. Adverse effects may happen"

"Option 1 is also aligned with the proposals of the FCAV document":

Reference FCAV white paper is not relevant to decide between options, as it is not a reference document. It has been acknowledged only between EASA, FAA and two aircraft manufacturers, without consultation of all other ATM/CNS stakeholders:

- Airlines and their associations
- EU ATM stakeholders (SJU, SDM, ETCL)
- Communication Service Providers
- ANSP
- Other aircraft and avionic manufacturers"

"Option 2 ensures that the objectives of AF6 CP1 are met":
True - demonstrated with demos and daily ATS B2 flights

"Option 2 making the additional cost incurred disproportionate"

Cost of "Option 1 + Upgrade of other B2 applications some years later" expected to be greater than "Option 2"

CONCLUSION : option 2 supported

response

Noted

CS-ACNS (issue 5) only provides the minimum DL capabilities needed to support compliance with CP1.

If additional DL capabilities (beyond ADS-C EPP) are required to be mandated to support certain types of operations, such need should be reflected at implementing regulation level.

Nonetheless, EASA will support applications for the approval of DL systems that offer ATS B2 services beyond ADS-C EPP based on ED-228A/ED-229A or later revisions of acceptable standards.

Please, see the response to comment #68.

See also the response to comment #24 on FCAV.

comment

67

comment by: Air France

Some ANSP may not be ready to collect and operationally use EPP data by End 2027. Consequently, in order to manage possible certification delays, regulator may consider a transition period to allow a proper deployment of full B2 rather than introducing potential problematic "craft" solution in a rush situation.



In a comparable situation, a smart solution has been introduced for GADSS Autonomous Distress Tracking (Amendment 48 to Annex 6 –Part 1 - 6.18). Some manufacturers have reported certification delays to meet original mandate (01/2024). Updated requirement still requests aircraft with first CoA dated 01/2024 to be equipped, but ask to equip before 01/2025. Retrofit of aircraft delivered without ADT in 2024 will be easily performed in 2025 by airlines, with no significant extra cost.

Such a rule for ATS B2 would allow to secure ADS-C EPP aircraft equipage rate, avoid any intermediate standard and future retrofits, follow existing approved standards supporting industrialization target date, take full benefit of ATS B2 (CPDLC V2, FMS upload, etc...) and avoid new fragmentation issues (aircraft B1, aircraft B1 + EPP, aircraft full B2). Duration of this transition period would be set in accordance with ground EPP introduction ramp-up, ensuring a ground/board synchronized and efficient deployment. Operational consequences and impact on ATM automation would then be very limited. If commercial conditions for retrofit within transition period are comparable with linefit conditions, this could be easily supported by airlines. This would be highly preferred than retrofitting from Option 1 to Full B2 in the coming years.

response Noted

CS-ACNS (Issue 5) only provides the minimum DL capabilities needed to support compliance with CP1. The proposal for a transitional period cannot be introduced at CS-ACNS or other detailed specification (DS) level. CS-ACNS Issue 5 would be applicable for new designs and changes to type designs, in accordance with Part 21.

To introduce requirements on a transitional period a change at implementing regulation level (e.g. Commission Regulation (EU) 2015/640 and its Annex I (Part-26)) would be needed. Any subsequent regulatory changes should be done in accordance with the current or future editions of the European Plan for Aviation Safety (EPAS).

comment 191

comment by: EUROCONTROL

Option 2 is in our view the only acceptable solution which keeps more than just DOA holders' wish to minimize costs in mind. ANSPs, early equippers and the majority of airspace users will only get the expected benefits through a full ATS B2 implementation.

Please consider the global effect of the decision as well and do not only concentrate on the CP1/AF6 mandate for Europe; a precedent might open the door for other regulatory bodies to come up with their own unique requirements in the future which would ultimately move the whole world away from a harmonized implementation - instead of moving towards it.

response Noted

CS-ACNS (issue 5) only provides the design requirements for the minimum DL capabilities needed to support compliance with CP1. EASA will support applications for the approval of DL systems offering ATS B2 services beyond ADS-C EPP based on ED-228A/ED-229A or later revisions.



Please, see GM2 ACNS.B.DLS.001.

Please, see the response to comment #68.

e. General Aviation (GA) and proportionality issues

p. 43

comment 190

comment by: EUROCONTROL

Attachment [#2](#)

Please note that traffic figures at MUAC show that general aviation traffic accounts for about 5% (6-8.000 aircraft per month) of the total MUAC traffic (FL285+). On average these flights change their altitude by 7-8 thousand feet in MUAC's airspace, which mean that they heavily contribute to ATCO workload due to the necessary deconfliction from other traffic. Due to the existing DLS IR exemptions, only about 15% of the Business Aviation traffic connects to CPDLC (about 0.7% of MUAC's total traffic).

Since the CP1/AF6 mandate is for forward fit only, MUAC would prefer the business aviation sector also taking their share of contributing to the common goals of reducing emissions and improving safety in aviation. If certain DOA holders don't find it possible to develop and implement this technology, then indeed their aircraft should either stay out of upper airspace or only enter upper airspace if there is spare capacity.

response Noted

Nonetheless, business aircraft with a CofA issued after 5 February 2020 are generally no longer exempted.

As CS-ACNS is applicable directly to manufacturers, their perspective and capability to practically meet the deadlines needs to be considered.

comment 287

comment by: Gulfstream Aerospace Corporation

Gulfstream Aerospace Corporation:

Comment:

Option 2 does not seem to be feasible for 12/31/2027 due to lack of regulation and ground infrastructure readiness.

Rationale:

Timeline does not support crucial changes required for ADS-C EPP implementation

Recommended Change:

EASA should consider an extension to this timeline for implementation.



response

Noted

Such timeline extension would not be possible at CS-ACNS or other detailed specification (DS) level.



3. Appendix — Attachments

 [GAMA23-28 Input to EASA to Inform Industrialisation Readiness Assessment - 2023-04-28.pdf](#)

Attachment #1 to comment [#204](#)

 [ECTL Comments ANNEX 1.pdf](#)

Attachment #2 to comment [#190](#)

