
FLIGHT TECHNOLOGIES AND PROCEDURES DIVISION



**Data Link Communications
Application Guide**

Version: 10.21



FLIGHT TECHNOLOGIES AND PROCEDURES DIVISION



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Document Changes

Version	Date	Description of Change
6.21	June 3, 2021	<ul style="list-style-type: none"> • Complete revision of the entire guide, as follows: 1. Text changes, 2. Addition and a deletion of table column in Tables 1.2 and 1.3, 3. Deletion of 4th table and Section 4, 4. Re-label of all tables and paragraphs, 5. Moved Application form to its own Section 2, 6. Added radio buttons for data link system type, 7. Moved formerly section 4 suggested reading list to application form, 8. Added photos when necessary, 9. Renumbered and some case new colors for sections, 10. Added flight plan example to paragraph 4.4, 11. Moved instructions for attaching files using Adobe Acrobat and the file naming convention to its own Appendix A. 12. Added a final application package checklist to Appendix A 13. Added notation to flight plan code M1, M2, and M3 to read: “(if installed IAW AC 90-150B)” 14. Remove old Appendix C and created a new document to navigate the Harris website to be placed online on FAA data link website. 15. Added new Appendix C with flow charts.
08.21	August 08, 2021	Updated the address on page ii
10.21	October 21, 2021	Change title of guide to “Data Link Communications Application Guide”

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Section 1: Introduction

This application guide was developed by the Federal Aviation Administration (FAA) [Flight Technologies and Procedures Division](#) (AFS-400) to provide operators with an organized method for submitting required content for an A056 data link authorization. We recommend you use this guide, as it expedites the application process. This document may be used for the following:

1. New applications (See [Tables 1.2 and 1.3](#));
2. Operators with a current A056 adding identically equipped aircraft;
3. Operators with a current A056 adding non-identically equipped aircraft; or
4. Adding data link capability to an existing A056.

1.1 Guidance Documents

The overarching guidance for data link approval is in Advisory Circular [AC 90-117](#), *Data Link Communication*. For airworthiness guidance, refer to [AC 20-140](#), *Guidelines for Design Approval of Aircraft Data Link Communication Systems Supporting Air Traffic Services (ATS)*. For new applications, operators should schedule a pre-application meeting or teleconference with the Flight Standards Office (FS).

1.2 Terms

This document uses the term “Principal Inspector (PI)” which may be a Principal Operations Inspector (POI), Principal Avionics Inspector (PAI) or Principal Maintenance Inspector (PMI). The use of “operator” refers to an operator, certificate holder, program manager, and operator/company.

1.3 Summary of Upgrade Requirements by Operation

Part 91 operators are not required to have a Letter of Authorization (LOA) for U.S. domestic data link operations but do require an A056 LOA for oceanic and remote continental operations. Part 91 operators must be proficient with the procedures and operations associated with the use of data link communication systems in accordance with their Airplane Flight Manual (AFM) and AFM Supplement, if applicable. All operators must meet the minimum equipment requirements when participating in CPDLC operations in U.S. domestic airspace. For more information regarding CPDLC in U.S. domestic airspace see <https://www.13harris.com/datacomm>





Table 1.1: Summary of Requirements by Operation:

Options	Operation	Requirements
1.	U.S. Domestic CPDLC-DCL (Departure Clearance)	<ul style="list-style-type: none"> • FANS 1/A or FANS 1/A+ over VDL Mode 0/A or VDL Mode 2
2.	U.S. Domestic CPDLC-DCL and CPDLC En Route (See Note 1)	<ul style="list-style-type: none"> • FANS 1/A or FANS 1/A+ • VDL Mode 2 • TSO-C160a or <ul style="list-style-type: none"> → Alternate means of compliance for a tunable multi-frequency VDL M2 radio (See Note 2) • Functional Integration aka “push to load” capability enabling the pilot to incorporate received routing changes (e.g., uplink messages UM79, UM80, and UM83) into the FMS.
3	U.S. Domestic CPDLC-DCL, U.S. Domestic En Route and Oceanic and Remote (Non-PBCS)	<ul style="list-style-type: none"> • FANS 1/A or FANS 1/A+ • VDL Mode 2 • TSO-C160a or <ul style="list-style-type: none"> → Alternate means of compliance for a tunable multi-frequency VDL M2 radio (See Note 2) • Functional Integration aka “push to load” capability enabling the pilot to incorporate received routing changes (e.g., uplink messages UM79, UM80, and UM83) into the FMS. • CPDLC • ADS-C
4.	PBCS (Oceanic/Remote Operations) only	<ul style="list-style-type: none"> • FANS 1/A+ (Aircraft must be equipped with Latency Timer indicated by “+” symbol (e.g. “FANS1/A+)) • CPDLC Performance must be RCP 240 • ADS-C Performance must be RSP 180 • LO/MSpec/OpSpec B036 must state RNP 4
5.	DCL/Oceanic and Remote Only (Non-PBCS)	<ul style="list-style-type: none"> • FANS 1/A or FANS 1/A+ over VDL Mode 0/A or VDL Mode 2 • CPDLC • ADS-C
6.	U.S. Domestic CPDLC-DCL and CPDLC En Route and PBCS	<ul style="list-style-type: none"> • FANS 1/A+ • VDL Mode 2 <ul style="list-style-type: none"> → TSO-C160a or → Alternate means of compliance for a tunable multi-frequency VDL M2 radio (See Note 2) • Functional Integration aka “push to load” capability enabling the pilot to incorporate received routing changes (e.g., uplink messages (UM79, UM80, and UM83) into the FMS. • CPDLC Performance must be RCP 240 • ADS-C Performance must be RSP 180 • LO/MSpec/OpSpec B036 must state RNP 4

Note: Alternate means of compliance for a tunable multi-frequency VDL M2 radio:

1. [ARINC 631-5](#) or later
2. Documentation from the OEM or a third party STC holder stating your aircraft is capable of a tunable multi-frequency VDL M2 radio
3. See [Tables 5, 6 and 7](#) for specific directions in addressing alternative compliance.



1.4 Application Types and Required Attachments

ALL APPLICATIONS MUST INCLUDE PAGES 9 THROUGH 11 OF THIS GUIDE COMPLETED AND PROVIDE A LETTER OF REQUEST. Below is a summary of possible A056 authorizations (columns) with the required attachments for each operation indicated by an “X”. Please see the flowcharts in [Appendix C](#) to assist in determining the appropriate documentation and limitations for your requested operation(s). For guidance on upgrading your A056 authorization, ask your PI about the specific attachments that you should submit.

Table 1.2: Aircraft Eligibility Summary:

Reference Number	U.S. Domestic DCL Only*	U.S. Domestic DCL and En route CPDLC*	U.S. Domestic DCL and En route CPDLC, Oceanic and Remote (Non-PBCS)	DCL/Oceanic and Remote PBCS Only	DCL/Oceanic and Remote Only (Non-PBCS)	U.S. Domestic DCL, CPDLC En route, and Oceanic and Remote (PBCS)
SOC-1	X	X	X	X	X	X
EQP-1	X	X	X	X	X	X
EQP-2		X	X			X
EQP-3		X	X			X
EQP-4				X		X
EQP-5				X		X

Table 1.3: Operational Requirements Summary:

Reference Number	U.S. Domestic DCL Only <i>(See note below)</i>	U.S. Domestic DCL and En route CPDLC <i>(See note below)</i>	U.S. Domestic DCL and En route CPDLC, Oceanic and Remote (Non-PBCS)	DCL/Oceanic and Remote PBCS Only	DCL/Oceanic and Remote Only (Non-PBCS)	U.S. Domestic DCL, CPDLC En route, and Oceanic and Remote (PBCS)
OPS-1	X	X	X	X	X	X
OPS-2			X	X	X	X
OPS-3	X	X	X	X	X	X
CSP-1			X	X	X	X
MEL-1	X	X	X	X	X	X
MEL-2			X	X	X	X
FLP-1	X	X	X	X	X	X
MON-1			X	X	X	X
MON-2			X	X	X	X
MON-3			X	X	X	X
TNG-1	91K, 121, 125 135	91K, 121, 125 135	91K, 121, 125 135	91K, 121, 125 135	91K, 121, 125 135	91K, 121, 125 135
TNG-2			91 Only	91 Only	91 Only	91 Only

Note: Part 91 operators do not need an A056 LOA for U.S. domestic data link operations but must have an A056 LOA for oceanic (PBCS or non-PBCS Oceanic and Remote Continental) operations.



Table 1.4 Limitations

Limitations	Standardized Wording for LOA/MSpec/OpSpec
No documentation of TSO-C160A or equivalent (See Table 1.5 below)	“U.S. Domestic CPDLC En-Route Prohibited”
No equivalent documentation of ARINC 631-5 or later.	“U.S. Domestic CPDLC En-Route Prohibited”
No documentation of functional integration “Push to Load” (No UM79/80/83 uplink capability). See Note 2	“U.S. Domestic CPDLC En-Route Prohibited”
No documentation of Latency Timer for FANS1/A+ (no plus symbol)	“PBCS Prohibited”
No documentation of RCP 240 and RSP 180	“PBCS Prohibited”
Aircraft not authorized RNP 4 on B036	“PBCS Prohibited”

Table 1.5 Alternate Means of Compliance Documentation Limitation Entries

Documentation Content	Entry in Table 5
No documentation of TSO-C160A but states VDL M2 radio has tunable multi-frequency capability	“TSO-C160/Equivalent” under Subnetworks
AFM or STC documentation or equivalent states “Radio and CMU are tested and meet the requirements specified in TSO-C160A” or similar statement	“TSO-C160a/Equivalent” under Subnetworks
No documentation of tunable multi-frequency capability (only states VDL-M2)	In the Limitation column select: “U.S. Domestic CPDLC En-Route Prohibited”

Note 1: Alternate means of compliance for a tunable multi-frequency VDL M2 radio:

1. ARINC [631-5](#) or later.
2. Documentation from the OEM or a third party STC holder stating that radio is a tunable multi-frequency VDL M2 radio.

Note 2:

UM 79: CLEARED TO [position] VIA [route clearance]

UM 80: CLEARED [route clearance]

UM 83: AT [position] CLEARED [route clearance]



1.5 Instructions

1. **For ALL Applications.** Use the fill-in-the-blank portion of this guide ([Section 2](#)) and include a letter of request explaining your intentions.
2. **Review [Table 1.1](#) and determine your aircraft's overall eligibility per operation.** Respond to each required attachment item for the desired column (e.g. U.S. Domestic DCL only) in [Table 1.2](#) and [Table 1.3](#). Applicable attachment items have an "X". **With each attachment, include the corresponding reference number** (e.g. SOC-1) next to each excerpt or hyperlink the reference number to the appropriate attachment with highlighted text. Include the document title, page number and paragraph number for each attachment. If an item is not applicable, provide a brief explanation as to why it does not apply. New applications must be uploaded to [Operations Approval Portal System \(OAPS\)](#). Please see the flowcharts in [Appendix C](#) to assist in determining the appropriate documentation and limitations for your requested operation(s).
3. **Ensure that your LOA/MSpec/OpSpec B036 lists the aircraft** that you are submitting in your A056 package. Your B036 must list RNP 4 to qualify for PBCS operations worldwide. Concurrent A056 and B036 applications are allowed provided the approved B036 is issued prior to issuing the A056.
4. **Adding Identically Equipped Aircraft.** Applicants should provide their PI with a request letter stating the aircraft is identically equipped as their previously approved aircraft.
5. **Adding Aircraft Non-identically Equipped.** Provide a separate application for each aircraft or fleet with documentation to confirm all installed data link communication equipment.
6. **Upgrading A056 Authorization.** If you already have OpSpec/MSpec/LOA A056 and want to amend or upgrade of your authorization, contact your PI with your request. In your letter of request, clearly state the upgrade you desire. [Table 2.1](#) should reflect your current and new data link capabilities. PIs can contact the [Flight Technologies and Procedures Division](#) specialists with any questions.

Final Application Package Preparation. See [Appendix A](#) for instructions on using Adobe Acrobat to attach files and the naming convention for submitting this application guide with attachments. This appendix includes a checklist to aid you in making sure your application is complete.





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Section 2: Application Form

2.1 Application Type

Date:

Letter of Request is Attached

Button to Reset Form:

U.S. Domestic DCL Only

U.S. Domestic DCL and En route CPDLC Only

U.S. Domestic DCL, CPDLC En route, and Oceanic and Remote (Non-PBCS)

U.S. Domestic DCL, Oceanic and Remote (PBCS) Only

U.S. Domestic DCL, Oceanic and Remote (Non-PBCS) Only

U.S. Domestic DCL, CPDLC En route, and Oceanic and Remote (PBCS)

Note: Part 91 operators do not need an A056 LOA for U.S. domestic data link operations but must have an A056 LOA for oceanic (PBCS or non-PBCS Oceanic and Remote Continental) operations.

2.2 Upgrade an Existing A056 Authorization

Check this section if you have an existing A056 authorization and are upgrading capability.

Upgrade Existing A056 Authorization

2.3 Adding an Aircraft to an existing A056 Authorization

Check this section if you have an existing A056 authorization and are adding an aircraft. Use a separate application guide for each make, model and series aircraft that you are adding.

Adding Identically Equipped Aircraft to an Existing A056

Adding Non-Identically Equipped Aircraft to an Existing A056



2.4 Operator Information

- Company/Operator Name:
- 14 CFR Part: Operator Four Letter Designation:
- Address: Suite:
- City: State: Zip Code:
- Region/U.S. Territory (*if applicable*):
- Country (*if applicable*):

2.5 Contact Information

This is the person to contact for questions about the application.

- Contact Name:
- Contact Phone:
- Contact Email:

2.6 Name of your PI

- First Name:
- Last Name:

2.7 Aircraft

Make:

Model:

Series:

Registration Number(s) (“N number”):

Serial Number(s):



2.8 Data Link System

FANS 1/A (+)

ATN

Dual System (ATN and FANS)

Make:

Model:

Series:

2.9 Software

FMS Software Make:

Version Number:

Table 2.1 Sample Authorization Table

Use the table below and provide your information as part of your application. See Tables 5 and 6 to aid you in fill out the sample authorization table.

Button to Reset Table 7 Selections:

INTEROP <i>(Check all that apply)</i>	Subnetworks <i>(Check all that apply)</i>	CSP	RCP	RSP	Limitations <i>(If no limitations, type "N/A")</i>
<p>FANS 1/A (+) with functional integration "push to load"</p> <p>FANS 1/A (+) without functional integration "push to load"</p> <p>ATN B1</p> <p>B2</p>	<p>VDL Mode 0/A</p> <p>VDL Mode 2 TSO C-160/ Equivalent*</p> <p>VDL Mode 2 TSO C-160a or later/ Equivalent*</p> <p>HFDL</p> <p>SATCOM (Iridium)</p> <p>SATCOM (Inmarsat)</p> <p>*See Table 6</p>	<p>Rockwell-Collins (ARINC)</p> <p>SITA</p> <p>Other: (Enter Below)</p>	<p>Note: "If PBCS Prohibited" is selected in the Limitations section, select "N/A" for both RCP and RSP values.</p>		<p>U.S Domestic CPDLC En Route Only</p> <p>ADS-C Only</p> <p>U.S. Domestic CPDLC En-Route Prohibited</p> <p>PBCS Prohibited</p> <p>Other: (Enter Below)</p> <p>(Use standardized wording from Table 5 and 6 for free text)</p>



2.8 Document Review

I have reviewed the following documents:

[AC 90-117](#), Data Link Communications

[AC 20-140](#) () Guidelines for Design Approval of Aircraft Data Link Communication Systems Supporting Air Traffic Services (ATS).

Global Operational Data Link (GOLD) Manual ([Doc 10037](#)), ICAO.

Performance-based Communication and Surveillance (PBCS) Manual ([Doc 9869](#)), ICAO.

State Aeronautical Information Publications (AIP). ([U.S. Link](#))

State Notices to Airmen (NOTAM). ([U.S. Link](#))

[FAA chart supplements](#), Oceanic Errors Safety Bulletin (OESB) ([NAT OPS Bulletins](#)).





Section 3: Aircraft Eligibility

For each attachment, provide the necessary page(s)/paragraph(s) to establish compliance. Include the corresponding reference numbers with each attachment or hyper-linked reference number to **highlighted text to show compliance**. If an item does not apply, leave the item unchecked and for the attachment include a page with the reference number and N/A. Specific airworthiness guidance is provided in [AC 20-140\(\)](#). For domestic operations only, RCP/RSP performance is not necessary and operators should select N/A in the sample [Table 7](#). Part 91 operators do not require an A056 Letter of Authorization (LOA) to conduct only domestic CPDLC operations. If Part 91 operators elect to apply for PBCS and/or Oceanic and Remote operations, they will be issued an A056 LOA for those operations as well as their authorization(s) or limitation(s) (as applicable) for domestic operations. **The use of highlights and hyper-links for your supporting documentation will greatly reduce the application process time. Include only the applicable page or paragraph to show compliance. Attaching irrelevant documentation other than the requested page/paragraph to show compliance delays the application process. Providing Service Information Letters (SILs) or other OEM communication DOES NOT verify installation on your aircraft. Maintenance records must show installation per the SOC.**

3.1 Statement of Compliance (SOC):

Check Box	Reference Number	SOC Attachment
	SOC-1	<p>Provide an OEM Statement of Compliance (SOC) or updated SOC if adding data link capability to an existing A056 OpSpec/MSpec/LOA. The SOC must indicate interoperability (INTEROP) (See AC 90-117, p. C-3, Table C-3). This may be documentation from the aircraft manufacturer, the manufacturer of the data link system, or another party in the AFM, AFM Supplement, or other acceptable documentation. Include the subnetworks supported by your aircraft (i.e. VDL M0/A, VDL M2, HFDDL, Inmarsat, Iridium etc.). The compliance statement should reference AC 20-140A or later revision for any of the following performance specifications:</p> <ul style="list-style-type: none"> • RCP 400 and/or RCP 240 • RSP 400 and/or RSP 180 <p>The compliance statement should reference AC 20-140C or later revision for:</p> <ul style="list-style-type: none"> • RCP 130 and/or RCP 240 and/or RCP 400 • RSP 160 and/or RSP 180 and/or RSP 400 <p>Note 1: Documentation of the lowest RCP and RSP value is adequate for showing compliance. Fleet aircraft records for each tail number may not necessarily have the same RCP/RSP values for each M/M/S. In such cases, provide documentation for each aircraft.</p> <p>Note 2: For a FANS 1/A+ CPDLC and ADS-C aircraft system, RTCA DO 306/ EUROCAE ED 122 is equivalent to RCP 240, RCP 400, RSP 180 and RSP 400 specifications.</p> <p><i>(AC 90-117, p. 3-2 and p. C-3)</i></p>



3.2 Equipage Attachments:

Check Box	Reference Number	Equipage Attachments
	EQP-1	<p>Provide documentation of maintenance and manufacturer/model of data link equipment installation records (AFM, Service Bulletins and Aircraft Service Changes (ASC) related to data link communications, Supplemental Type Certificates (STCs) etc.) Provide documentation of the following installed data communication equipment:</p> <ul style="list-style-type: none"> • FANS 1/A or FANS 1/A+ (Satellite, HF, VHF) equipment and/or ATN (VDL 2) VHF equipment • Data communications recording equipment (CVR, CVFDR etc.) See Part 91, §91.609(j) and InFO 16004. Provide documentation that the cockpit voice recorder(s) and flight data recorder(s) are in compliance with 14 CFR Part §91.609(j), Part §121.359(k), §125.227(i), §135.151(h). FAA INFO 16004 provides additional guidance concerning the applicability of these regulations <p><i>(AC 90-117, p.1-5 and p. 3-1)</i></p>
	EQP-2	<p>For U.S. domestic airspace en route operations, provide documentation that the aircraft is equipped with VDL M2. The VDL M2 requirement must include a tunable multi-frequency VDL M2 radio approved to an aircraft eligibility standard of TSO-C160a.</p> <p>Alternate means of compliance for a tunable multi-frequency VDL M2 radio:</p> <ol style="list-style-type: none"> 1. ARINC 631-5 or later (See Table 6 for table entry explanations) 2. Documentation from the OEM or a third party STC holder stating your aircraft is capable of a tunable multi-frequency VDL M2 radio 3. See Tables 5 and 6 for specific directions in addressing alternative compliance. <p>Note : If not equipped with VDL M2 or the above alternate means of compliance using VDL mode 2, the operator may use an alternate non-VDL M2 in coordination with their CSP(s) as per AC 90-117. <i>(AC 90-117, p. 3-3)</i></p>
	EQP-3	<p>For en route U.S. domestic airspace operations, provide documentation the avionics system has functional integration aka “push to load” capability enabling the pilot to incorporate received routing changes (e.g., uplink message (UM79, UM80, and UM83) into the FMS. <i>(AC 90-117, p. 3-2)</i> Provide documentation of installation if applicable.</p>
	EQP-4	<p>Provide documentation the FANS 1/A system includes message latency monitoring indicated by the “+” symbol. RCP 240 requires latency monitoring. See OPS-2 for pilot procedures. Provide documentation of installation if applicable.</p>
	EQP-5	<p>For PBCS airspace authorization, provide a copy of your B036 with at least RNP 4 listed in Table 1. If you are applying for a A056 and B036 at the same time, provide documentation that your aircraft is capable of at least RNP 4 as part of of this attachment and note the concurrent application in your Letter of Request. NAT OPS Bulletin 2018 004</p>



Section
4

Section 4: Operational Requirements

For each attachment, provide the necessary page(s)/paragraph(s) to establish compliance. Include the corresponding reference numbers with each attachment or hyper-linked the reference number to **highlighted text**. If an item does not apply, leave the item unchecked and for the attachment include a page with the reference number and N/A.

This section includes the minimum operational requirements in the following areas:

1. Operational Procedures
2. Communication Service Provider (CSP) Requirements
3. Master Minimum Equipment List/Minimum Equipment List (MMEL/MEL)
4. Flight Plans
5. Monitoring Performance and Reporting
6. Training

4.1 Operational Procedures

Establish policies and procedures for pilots and operational staff involved in data link operations and incorporate them in the appropriate operations manuals. **The use of highlights, outlines, tables and/or hyper-links for your supporting documentation will greatly reduce the application process time. Include only the applicable page or paragraph to show compliance. Attaching irrelevant documentation other than the requested page/paragraph to show compliance only delays the application process.**

Check Box	Reference Number	Operational Attachments
	OPS-1	Attach (page/paragraph) of operational data link procedures to include procedures and limitations applicable to data link communication specific to the installed CPDLC avionics on your aircraft. Include both normal and emergency operations in compliance with AC 90-117 from the following documents: <ul style="list-style-type: none"> • Airplane Flight Manual (AFM), • AFM Supplement, • Aircraft Operating Manual, and/or • International Operations Manual (IOM), Note: Generic procedure manuals do not qualify.



Check Box	Reference Number	Operational Attachments
	OPS-2	Provide documentation (i.e. AFM, AFM Supplement, IOM) of crew operational procedures for changing latency timer value. <i>(See AC 90-117, p. 5-2. For latency timer, see NAT OPS Bulletin 2018_002, Rev 1)</i>
	OPS-3	Attach documentation of procedures for establishing and maintaining voice communications (including any required SELCAL check(s)). (AC 90-117 , p. 5-5)

4.2 Communication Service Provider (CSP) Eligibility

The operator is responsible to ensure their CSP provides the minimum performance and service.

Check Box	Reference Number	CSP Attachment
	CSP-1	<p>Provide charter membership documentation for both the operator and CSP(s). When providing documentation of charter membership, provide a screen shot of the charter stakeholders with your name/company name included in the screen capture (See Data Link Reporting and Charter Membership).</p> <p>Note: Operators and CSPs need only to become charter members by following the instructions at http://www.fans-cra.com/. See guide Data Link Reporting and Charter Membership. On the website, find the guide link in the last column of the table, “Additional Information”.</p> <p><i>or</i></p> <p>Submit documentation of each CSP arrangement. They must provide the following services to be included in your documentation:</p> <ol style="list-style-type: none"> 1. Failure Notification, 2. Recording data link messages, 3. CSP Integrity, 4. Compliance with CSP allocations for RCP/RSP, and 5. Adequate subnetwork coverage for the route flown. <p><i>(AC 90-117, p. 4-1 and 4-5)</i></p>



4.3 MEL/MMEL

Check Box	Reference Number	MEL/MMEL Attachments
	MEL-1	<p>Provide documentation of your Minimum Equipment List (MEL) [certificated operators] or Master Minimum Equipment List (MMEL) [non-certificated operators] that addresses all data link communication equipment (Section 23).</p> <p>Note 1: If MMEL has not been updated for CPDLC equipment for aircraft that are issued an STC, and the STC Holder cannot provide an FAA-issued STC Relief Approval Letter to the operator in accordance with FAA Policy Letter 109, the operator is reminded that they must adhere to 14 CFR 91.213. (AC 90-117, p. 5-1 and pp. B-1 and B-2)</p> <p>Note 2: FAA-issued STC Relief Approval Letters are posted on the Flight Standards Information Management System (FSIMS) here: https://fsims.faa.gov/PICResults.aspx?mode=Publication&doctype=STCReliefAppLetter</p>
	MEL-2	<p>For operators conducting oceanic and remote continental operations, provide documentation of your Long-Range Communication System (LRCS) High-Frequency Transceiver Minimum Equipment List (MEL) or Master Minimum Equipment List (MMEL) Relief to confirm no credit is given for data link.</p> <p>Note: Reference FAA Policy Letter 106, (PL-106), High Frequency (HF Communications MMEL Requirements).</p>

4.4 Flight Plans

The majority of A056 applications do not submit flight plan codes per their aircraft’s capabilities.

International and Domestic CPDLC operations use different flight plan codes in field 18. Verify that your Flight Plan vendor has the correct codes and equipage in their database. Failing to file the correct flight plan codes can result in less than optimal ATC routings and increase fuel consumption. Submit the correct flight plan codes for both domestic and international flight plans. Your sample crew operational flight plan must have an adequate fuel load to include Contingency and Final Reserve (Holding) fuel in accordance with the applicable parts of ICAO Annex 6 and any applicable regulations in 14 CFR, whichever is greater..

Refer to the following links:

- [FAA Flight Plan Brochure](#)
- [Tables for DAT/ codes for Field 10 \(pp. 20 and 21 of this guide\)](#)
- [Appendix B](#) of this guide.



Check Box	Reference Number	Flight Plan Attachment
	FLP-1	<p>Your aircraft equipage MUST match your flight plan codes for the Comm/Nav/Surveillance requirements in the airspace you are flying. Verify that your flight plan vendor has all the correct codes and equipage in their database for domestic and international flight plans. You MUST provide flight plans for:</p> <ol style="list-style-type: none"> 1. CPDLC operations in US airspace (ATC (i.e. fields 10a, 10b and 18), and 2. International flight plan (ATC (i.e. fields 10a, 10b and 18) and crew operational flight plan (i.e. routing, fuel, contingencies)) if your operation will include future oceanic/remote continental operations. <p>Below are resources to aid in your flight planning:</p> <ul style="list-style-type: none"> • FAA Form 7233-4 • Appendix B of this guide <p>Note 1: Verify that the highlighted items in the Flight Plan Attachment’s ICAO Equipment “Block” match those listed within ASOC, Section 3.</p> <p>Note 2: If you are not PBCS capable, do not include a P2 entry in Field 10a and SUR/RSP180 in Field 18 of the flight plan.</p> <p>Note 3: If your aircraft SATVOICE is installed IAW AC 20-150B, ensure you use the appropriate “M” code in Field 10a</p>

4.5 Performance Monitoring

Check Box	Reference Number	Monitoring Attachments
	MON-1	Provide documentation of your data link monitoring process with procedures to address substandard performance. (AC 90-117 , pp. 6-1 and 6-2)
	MON-2	Provide documentation of procedures to report data link communication failures and/or problems. This should include contacting the appropriate Data Link Monitoring Agency (DLMA) for your area of operation. (AC 90-117 , p. 8-1)
	MON-3	<p>Provide documentation of demonstrated performance results from: https://www.faa.gov/air_traffic/separation_standards/PBCS_Monitoring/ (AC 90-117, p. 6-2)</p> <p>Note: If no data or insufficient data is available, then compliance is based on the SOC and MON-3 is not applicable. Please note this in your application.</p>



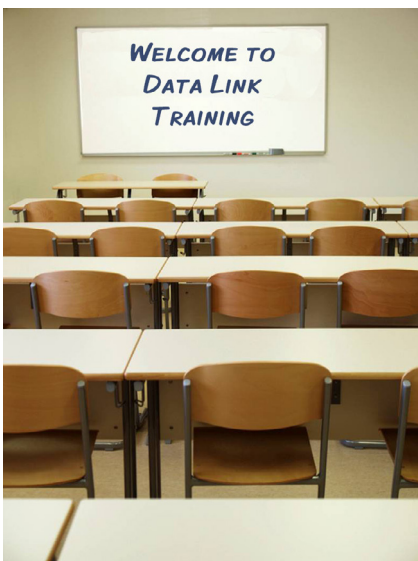
4.6 Training

Check Box	Reference Number	Training Attachments
	TNG-1	Part 91K, 121, 125, and/or 135 operators. Provide a training syllabus of your training program. Your training must address the operational practices, procedures and training items related to data link communication operations (e.g., during initial, upgrade, or recurrent training for pilots, operational control personnel, and maintenance personnel). Training curricula should be in accordance with AC 90-117 , §§ 91.3 , 91.703 (a) (1) and (2) and ICAO Annex 2 (Rules of the Air), paragraph 2.5.1. (AC 90-117 , Chapter 7)
	TNG-2	Part 91 Operators. Provide documentation (e.g. training syllabus, training completion certificate/ record of completed training) that pilots were provided data link communication training. Part 91 operators must be proficient with the procedures and operations associated with the use of data link communication systems in accordance with their Airplane Flight Manual (AFM) and AFM Supplement if applicable. (AC 90-117 , p. 7-1, LOA A056) Note: Operators who hire contract pilots must provide your process of verifying data link training in accordance with LOA, A056.

4.7 PI Requested Documentation

In some instances, your PI may want additional documentation that is unique to your operations. If your PI has not request additional documentation under POI-1, then just leave it unchecked and place POI-1 and N/A as part of your attachments.

Check Box	Reference Number	Additional PI Requested Documentation
	POI-1	If requested, attach additional documentation requested by your PI. Place N/A if your PI did not request additional documentation.






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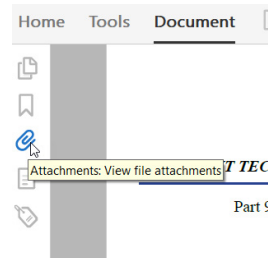



Appendix A | Final Application Preparations

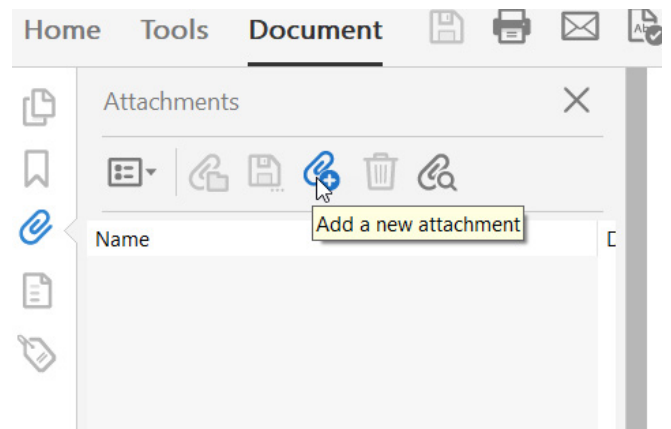
A.1 How to Attach Documents using Adobe Acrobat

Attach files to this PDF using the Acrobat attachment feature. Send your application with all the attachments in one file. Use the naming convention described in paragraph A.2 for your file name. This method will result in ONE PDF WITH ATTACHMENTS. If do not have Acrobat, then use the naming convention in [Section A.2](#) and provide the attachments as separate documents. Attach document with Acrobat as follows:

1. Click the Paper Clip icon  in the left margin of this application guide:



2. To Add Files click the  and browse for the file attachments on your computer.

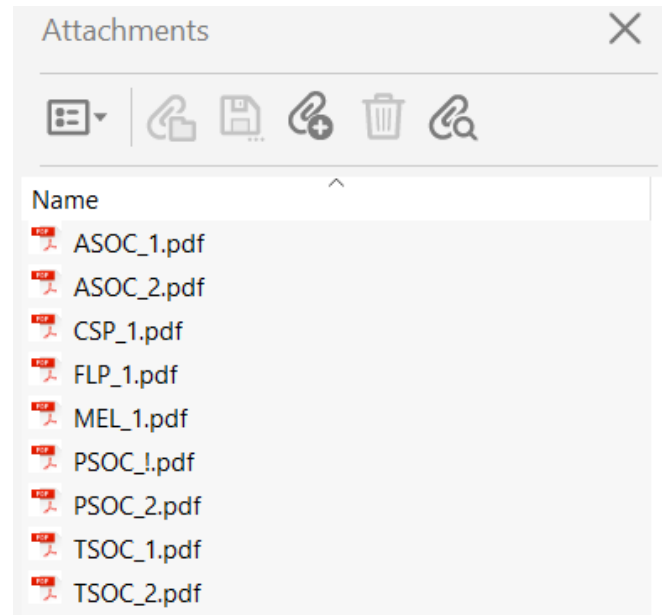




3. Click on the files to attached to your application.

Name	Date modified	Type	Size
ASOC_1	4/26/2021 3:58 PM	Adobe Acrobat D...	180 KB
ASOC_2	4/26/2021 3:58 PM	Adobe Acrobat D...	178 KB
CSP_1	4/26/2021 4:04 PM	Adobe Acrobat D...	178 KB
FLP_1	4/26/2021 4:11 PM	Adobe Acrobat D...	178 KB
MEL_1	4/26/2021 4:04 PM	Adobe Acrobat D...	178 KB
PSOC_!	4/26/2021 4:02 PM	Adobe Acrobat D...	180 KB
PSOC_2	4/26/2021 4:02 PM	Adobe Acrobat D...	180 KB
TSOC_1	4/26/2021 3:59 PM	Adobe Acrobat D...	180 KB
TSOC_2	4/26/2021 4:00 PM	Adobe Acrobat D...	180 KB

4. Make sure you have added all the necessary files including any addendum attachments needed for the LOAs which are to be included in your application.



A.2 Naming Convention for Application

Use the following file naming convention when submitting this document and attachments as one document (if using Acrobat option).

LOA_Application_Company/Name_Date(XX_XX_XXXX)_Version_Number_(VX)

Example: LOA_Application_ABC LLC_05_10_2020_V1

Use the following file naming convention when submitting separate attachments not attached to this application guide (i.e. not using the Acrobat file attachment feature).

LOA_Attachments_Company/Name_Date(XX_XX_XXXX)_Version_Number_(VX)

Example: LOA_Attachments_ABC LLC_05_10_2020_V1

Note: Version numbers are used in order for the PI to distinguish between a re-submittal of an application and the original which should be labeled beginning with V1.



A.3 A056 Application Checklist

After completing Sections 2 and 3, please return to this checklist to ensure all the applicable items have been completed.

Reviewed [AC 90-117](#) (current version) and, if applicable, Global Operational Data Link Document (GOLD) ICAO Doc 10037

Completed [Section 2](#) (Application Form).

Included supporting documentation ([Section 3](#), Attachments).

Attached files to this application and used the naming convention described in this appendix.

Forwarded application to the PI by attaching this guide and attachments to the FAA's Operations [Approval Portal System \(OAPS\)](#)

Reviewed and prepared for possible PI observation and/or evaluation as per items 1 through 4 below.

Explanation:

Your ASI may want to observe and evaluate your ability to perform data link operations. The following topics may be covered in this phase, at the discretion of the inspector:

1. Describe your data link procedures (logon, transfer of control from Current Data Authority CDA to Next Data Link Authority (NDA), logoff, and when it is necessary to go to voice)
2. Describe your procedures for data link monitoring.
3. Identify and explain any data link operational limitations included in the data link section(s) of your AFM or AFMS.
4. Describe how you comply with the data link manufacturer's Instructions for Continued Airworthiness (ICA).



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Appendix
B

Appendix B: Flight Plan Com Descriptors

Table B-1. Item 10a Flight Plan COM Descriptors

Descriptors	System	Data Link Operation
E1	FMC WPR ACARS	May be used for short position reports
E2	D-FIS ACARS	Short transmission of weather reports and operational data
E3	PDC ACARS	U.S. Domestic
J1	CPDLC ATN B1 VDL M2	U.S. Domestic*/Europe for ground clearance and en route
J2	CPDLC FANS 1/A HFDL	Oceanic and Remote Continental
J3	CPDLC FANS 1/A VDL Mode 0/A	U.S. Domestic (Ground Clearance Only)
J4	CPDLC FANS 1/A VDL Mode 2	U.S. Domestic for ground clearance and en route*
J5	CPDLC FANS 1/A SATCOM (Inmarsat)	Oceanic and Remote Continental
J6	CPDLC FANS 1/A SATCOM (MTSAT)	Oceanic and Remote Continental
J7	CPDLC FANS 1/A SATCOM (Iridium)	Oceanic and Remote Continental
P1	CPDLC RCP 400	Oceanic and Remote Continental
P2	CPDLC RCP 240	Oceanic and Remote Continental and PBCS operations**
P3	SATVOICE RCP 400	Oceanic and Remote Continental
M1	Inmarsat (if installed IAW AC 20-150B)	Oceanic and Remote Continental
M2	MTSAT (if installed IAW AC 20-150B)	Oceanic and Remote Continental
M3	Iridium (if installed IAW AC 20-150B)	Oceanic and Remote Continental

*The VDL M2 requirement for U.S. domestic en route operations must include a tunable multi-frequency VDL M2 radio approved to an aircraft eligibility standard of [TSO-C160a](#) or have an alternate means of compliance as described in [EQP-2](#) of this guide. Enroute domestic operations also must have functional integration aka “push to load” capability enabling the pilot to incorporate received routing changes (e.g., uplink message (UM79, UM80, and UM83) into the FMS supported by B2 and FANS 1/A (+) operations.

** Must be FANS 1/A+ equipped (latency timer indicated by the “+” symbol) and authorized to conduct those operations.

Note: Part 91 operators filing “J” codes for U.S. domestic data link services must have a data link authorization to file J5–J7 in oceanic and remote continental airspace.



B.1 Flight Plan Example:

If Actual Communications Performance (ACP) meets at least RCP 240 at a performance of at least 95 percent or greater and Actual Surveillance Performance (ASP) meets at least RSP 180 of at least 95 percent or greater, then the operator approved for RCP 240/RSP 180 may file the following:

- Field 10a: “P2.”
- Field 18: “SUR/RSP180.”

Table B-2. Item 10b Flight Plan COM Descriptors

Descriptors	System	Data Link Operation
D1	ADS-C with FANS 1/A capabilities	Oceanic and Remote Continental
G1	ADS-C with ATN capabilities	Oceanic and Remote Continental

In Item 10b of the flight plan, operators should insert one of the descriptors, D1 and G1, as appropriate, listed in Table A-2, to identify an aircraft’s RSP capability.

B.2 DAT/ Codes for U.S. Domestic CPDLC Operations

Table B-3. PDC and CPDLC-DCL only

User Preference	Capability Description	Field 10a	Field 18 DAT/Code	Comments
PDC only	Not ACARS equipped but gets PDC via manual means.	Z	1PDC	Some aircraft are non-ACARS equipped, and 10a is a physical equipage. Still get PDC via other means (e.g. gate printer). Optional if currently getting PDC.
PDC only	Equipped only for ACARS/PDC	E3 Z	1PDC	Optional if currently getting PDC
PDC only	Equipped for ACARS/PDC and FANS but wants PDC only.	E3J4x Z	1PDC	Equipped for ACARS/PDC and FANS 1/A or 1/A +, and possible other capabilities (Jx)
FANS 1/A & FANS 1/A+ CPDLC-DCL/PDC	Equipped for ACARS/PDC and FANS but wants FANS 1/A or FANS 1/A+ only for CPDLC-DCL	J4Jx Z	1FANS	Identifies US domestic preference for FANS 1/A or FANS 1/A+ CPDLC-DCL
FANS 1/A & FANS 1/A+ CPDLC-DCL/PDC	Equipped for ACARS/PDC and FANS, with primary/secondary preferences.	E3J4Jx Z	1FANS2PDC	Code number shows priority preference (e.g. CPDLC-DCL is primary preference; PDC is secondary that will be used if primary is unavailable and feasible.)



Table B-4. PDC ONLY and En Route Data Link Clearances

User Preference	Capability Description	Field 10a	Field 18 DAT/Code	Comments
FANS 1/A & FANS 1/A+ No En Route UM80 load issues	For flights authorized for en route data link with no UM80 load issues and for PDC services only	E3J4Jx Z	1PDCFANSE	This code is to be used to obtain PDC and CPDLC enroute clearances with aircraft that <u>have no</u> en route UM80 issues.
FANS 1/A & FANS 1/A+ With en route UM80 load issues	For flights authorized for en route data link with UM80 load issues and for PDC service only	E3J4Jx Z	1PDCFANSER	This code is to be used to obtain a PDC and CPDLC en route clearances with aircraft that <u>have</u> en route UM80 load issues.

Table B-5. CPDLC-DCL and En Route Data Link Clearances

User Preference	Capability Description	Field 10a	Field 18 DAT/Code	Comments
FANS 1/A & FANS 1/A+ No En Route UM80 load issues	For flights authorized for enroute data link with no UM80 load issues.	E3J4Jx Z	1FANSE2PDC	This code is to be used to obtain CPDLC-DCL and en route clearances with aircraft that <u>have no</u> UM80 load issues.
FANS 1/A & FANS 1/A+ With en route UM80 load issues	For flights authorized for en route Data Comm with UM80 load issues	E3J4Jx Z	1FANSER2PDC	This code is to be used to obtain CPDLC-DCL and en route clearances with aircraft that <u>have</u> UM80 load issues.

Table B-6. En Route Data Link Clearances ONLY

User Preference	Capability Description	Field 10a	Field 18 DAT/Code	Comments
FANS 1/A & FANS 1/A+ No En Route UM80 load issues	For flights authorized for En Route Data Comm with no UM80 load issues.	J4 Z	FANSE	This code is to be used to obtain CPDLC en route clearances with aircraft that <u>have no</u> UM80 load issues. (No tower DCL or PDC)
FANS 1/A & FANS 1/A+ With en route UM80 load issues	For flights authorized for en route data link with UM80 load issues.	J4 Z	FANSER	This code is to be used to obtain CPDLC en route clearances with aircraft that <u>have</u> UM80 load issues. (No tower DCL or PDC.)

Note 1: It makes no difference whether “FANS or FANSP” is filed in a flight plan. Either entry will result in a Data Comm clearance.

Note 2: UM80 is CLEARED [route clearance]



B.3 Flight Plan Example and Fuel Terms

Example :

(FPL-N12345-IG

-GA5C/M-**SBDE2E3FGHIJ1J4J5M1P2RWXYZ/LB1D1**

-KLGB2200

-N0515F410 DCT SLI J78 TRM DCT Verno DCT CNX/N0513F450 DCT SONYA DCT ADM DCT BAKRE DCT LGC DCT MCN DCT DBN DCT Lotts DCT SAV DCT

-KSAV0332 KCHS

-PBN/A1L1B1C1D1O1S2 **DAT/1FANSER2PDC SUR/260B RSP180** REG/N507GD

SEL/ABCD CODE/A6548B

RMK/SATPHONE 1 555 867 5309)



Fuel Explanations

Taxi Fuel: Fuel consumed before takeoff accounting for local conditions at the departure and APU fuel consumption.

Trip Fuel: Fuel required to fly from takeoff to landing at the destination airport.

Contingency Fuel: Fuel required to compensate for unforeseen factors. Not less than 5% of trip fuel.

Destination Alternate Fuel:

- *When an alternate is required:* Perform missed approach at destination, climb to expected cruise altitude, fly expected routing, descend to the expected initial approach, and conduct the approach and landing.
- *When an alternate is not required:* 15 minutes at holding speed, 1500 ft above the destination airport in standard conditions
- *Turbine Engine:* Fly for two hours at normal cruise above the destination airport, including final reserve fuel.

Final Reserve Fuel: Turbine Engine Fuel required to fly for 30 minutes at holding speed, 1500 ft above airport elevation in standard conditions.

Additional Fuel: Supplementary fuel required to enable the aircraft to descend as necessary to land at an alternate airport in the event of engine failure or loss of pressurization at the most critical point along the route.

Discretionary Fuel: Extra fuel to be carried at the discretion of the pilot-in-command.



Appendix C: Flow Charts

C.1 Explanation:

The flow charts in this appendix can aid you in navigating data link requirements. There are two flow charts. Since Part 91 operators are not required to have a A056 LOA for U.S. domestic operations and have slightly different requirements, we have created a separate flow for those operators. The other flow chart is specifically for operators under 14 CFR Parts 91K, 121, 125, and 135. This application guide provides for six possibilities for an A056 authorization. As listed in [Table 1.1](#) and also across the top of Tables [1.2](#) and [1.3](#) are the following A056 options:

1. U.S. Domestic CPDLC-DCL (Departure Clearance),
2. U.S. Domestic CPDLC-DCL and CPDLC En Route,
3. U.S. Domestic CPDLC-DCL, En Route clearance and Oceanic and Remote (Non-PBCS),
4. Oceanic and Remote Continental and PBCS only
5. DCL/Oceanic and Remote Continental Only (Non-PBCS)
6. U.S. Domestic CPDLC-DCL and CPDLC En Route and Oceanic and Remote Continental (PBCS)

In addition to these options, the flow charts include adding aircraft to an existing A056 authorization.

There are three color lines in the flow charts. They are:

1. Black lines lead to a yes or no diamond decision block,
2. Green lines proceed from diamond decision blocks as “yes”, and
3. Red lines proceed from diamond decision blocks as “no”

As you answer “yes” or “no” and follow the flow chart for your operation, it will lead you to a block with specific authorizations, required references and limitations.





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Appendix D: Definitions and Acronyms

D.1 Definitions

A

Aircraft Communications Addressing and Reporting System (ACARS). ACARS is a digital datalink system for transmission of short messages between aircraft and ground stations via airband radio or satellite. ACARS as a term refers to the complete air and ground system, consisting of a service provider and aircraft/ground equipment.

Automatic Dependent Surveillance-Contract (ADS-C). ADS-C is a surveillance information system using automated reports. An agreement is established between the ground system and the aircraft via a data link. Without pilot input, the ATSU can establish a “contract” to provide reports of aircraft position, altitude, speed, elements of navigational intent and meteorological data. The system can generate the following types of reports:

- Periodic—The ATSU can set or alter the update rate as needed (a higher update rate is usually required in high traffic areas).
- Event—A change in waypoint, vertical rate, lateral deviation or altitude automatically triggers a report.
- Demand—An ATSU can request an update as needed, and this does not affect an existing contract preset rate.

Aeronautical Telecommunication Network (ATN). A global internetwork architecture that allows ground, air-ground, and avionics data subnetworks to exchange digital data for the safety of air navigation and for the regular, efficient, and economic operation of air traffic services.

C

Controller-Pilot Data Link Communications (CPDLC). CPDLC is a two-way data-link communication system by which controllers can transmit digital text messages to an aircraft as an alternative to voice communications. Messages from an aircraft to the ATSU may follow a standard format or may be free-text. Messages from a controller normally follow a standard format and usually requiring a response from the flight crew.

CSP Integrity. The CSP must pass messages without manipulating the information that is protected by error detection codes that are used by the aircraft system and the ATSU. In particular, the CSP must not reconstitute or regenerate any of the error detection codes.

F

Functional Integration (aka “Push to Load”). The aircraft provides automation through a Flight Management System for flight plan modifications (i.e. UM79, UM80 and UM83).

Future Air Navigation System (FANS). FANS is an avionics system which provides direct data link communication between the pilot and the air traffic controller. The communications include air traffic control clearances, pilot requests and position reporting.



R

Required Communication Performance (RCP). A set of requirements for air traffic service provision, aircraft capability, and operations needed to support performance-based communication within a defined airspace.

Required Surveillance Performance (RSP). A statement of the performance requirements for operational surveillance in support of specific ATM functions.

D.2 Acronyms

Table C-1: Acronyms

Acronym	Meaning
ACARS	Aircraft Communications Addressing and Reporting System
ADS-C	Automatic Dependent Surveillance-Contract
AIM	Aeronautical Information Manual
AFM	Airplane Flight Manual
ATN	Aeronautical Telecommunication Network
ATS	Air Traffic Service
ATSU	Air Traffic Service Unit
CPDLC	Controller-Pilot Data Link Communication
CRA	Central Reporting Agency
CSP	Communication Service Provider
CVFDR	Cockpit Voice and Flight Data Recorder
CVR	Cockpit Voice Recorder
DLMA	Data Link Monitoring Agency
EFB	Electronic Flight Bag
FANS	Future Air Navigation System
HF	High Frequency
HFDL	High Frequency Data Link
ICAO	International Civil Aviation Organization
IOM	International Operations Manual
INTEROP	Interoperability Requirements Standards
LOA	Letter of Authorization
LRC	Long Range Communication
MEL	Minimum Equipment List
MMEL	Master Minimum Equipment List
MSpec	Management Specification
MTSAT	Multifunctional Transport Satellite
OEM	Original Equipment Manufacturer.
OM	Operations Manual
OpSpec	Operation Specification
PAI	Principal Avionics Inspector
PBCS	Performance-based Communication and Surveillance
PI	Principal Inspector



Acronym	Meaning
POI	Principal Operations Inspector
PMI	Principal Maintenance Inspector
RCP	Required Communication Performance
RSP	Required Surveillance Performance
SATCOM	Satellite Communication
SBD	Short Burst Data
SELCAL	Selective-Calling Radio System
SOC	Statement of Compliance
SSP	Satellite Service Provider
VDL	VHF Data Link
VDLM2	VDL Mode 2
VHF	Very High Frequency