

Parts 91K, 121, 125, and 135

In order to properly view this document, download it to your desktop and open it with Adobe Acrobat or download the free Adobe pdf-Reader at: <https://www.adobe.com/acrobat/pdf-reader.html>

FLIGHT TECHNOLOGIES AND PROCEDURES DIVISION

Oceanic and Remote Continental Operations

Oceanic Required Navigation Performance (RNP)

Application Guide

Version 2.24

Guide to assist Part 91K, 121, 125, and 135 operators with
B036, B037, B038, B039, and B054



NextGEN

FLIGHT TECHNOLOGIES AND PROCEDURES DIVISION



Federal Aviation Administration

Flight Technologies and Procedures Division, AFS-400

800 Independence Ave SW

Building 10A / 8th Floor

Washington, DC 20591

Phone: (202) 267-4623

Document Changes

Version	Date	Description of Change
7.23	7/28/2023	<i>Initial Operating Capability (IOC)</i>
9.23	9/7/2023	Added statement to cover to open guide with Adobe software for proper functionality
2.24	2/13/2024	Added WY to state drop-down field

Intentionally Blank

Contents

Document Changes	iii
Section 1: Introduction	1
Table 1-1: List of Authorizations Available by using this Guide	1
1.1 Applicability	2
1.2 Terms and Symbols	2
1.3 Aircraft/Fleet	2
1.4 Upgrades in Aircraft or Equipage or adding to Aircraft Fleet	2
1.5 B036, Oceanic and Remote Continental Navigation using Multiple LRNS	3
1.6 B037, Operations in Central East Pacific (CEP) Airspace	3
1.7 B038, Operations in North Pacific (NOPAC) Airspace	3
1.8 B039, Operations in North Atlantic (NAT) High Level Airspace (HLA)	3
1.9 B054, Oceanic and Remote Airspace Navigation using a Single LRNS	4
1.10 Guidance Documents	4
1.11 Instructions	5
Table 1-2: Summary of Authorizations for Oceanic Operations	6
Table 1-3: Titles of OpSpecs/MSpecs/LOAs used in Table 1-2	7
Section 2: Application Form	9
2.1 Application Type	9
2.2 Contact Information	10
2.3 Description of Operation	11
2.4 Aircraft/Fleet and Navigation Equipage	11
2.5 Avionics	12
Table 2-1: Communication/Navigation/Surveillance (CNS) Equipment Information	12
2.6 Sample Table 1	13
Table 2-2: Sample Authorization Table – Authorized Airplane(s), Equipment	13
Section 3: Aircraft Eligibility Attachments	15
3.1 Statement of Compliance (SOC)	15
3.2 Equipage:	16

Section 4: Operational Attachments **19**

4.1 International Operations Manual (IOM) 19

4.2 Operational Procedures 19

4.3 MEL 22

4.4 Specific Areas of Operation 23

4.5 B050, Authorized Areas of En Route Operations, Limitations, and Provisions 24

4.6 Flight Plans 24

Section 5: Training Attachments **25**

Section 6: Additional Attachments/Information **27**

6.1 Additional PI Requested Documentation 27

6.2 Document Review 27

Appendix A | Final Application Preparations **A1**

A.1 How to Attach Documents using Adobe Acrobat A1

A.2 Naming Convention A3

A.3 Application Checklists A4

Appendix B: Definitions and Acronyms **B1**

B.1 Definitions B1

B.2 Acronyms B4

Please Provide Feedback B6



Section
1

Section 1: Introduction

This application guide is for those applying for the following Operations Specifications (OpSpec), Management Specifications (MSpec) and Letter of Authorization (Part 125):

Table 1-1: List of Authorizations Available by using this Guide

Designation	Title
B036	Oceanic and Remote Continental Navigation using Multiple Long-Range Navigation Systems (LRNS)
B037	Operations in Central East Pacific (CEP) Airspace
B038	Operations in North Pacific (NOPAC) Airspace
B039	Operations in North Atlantic (NAT) High Level Airspace (HLA)
B054	Oceanic and Remote Airspace Navigation Using a Single Long-Range Navigation System.

Note: B036 (or a B054, for NAT HLA) is a prerequisite for all the authorizations in this guide. The operator may apply for these authorizations in one application with the use of this application guide. For example, see the possible selection options in [Section 2](#).

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 as part of an application package for Oceanic and Remote Continental Operations/Oceanic Required Navigation Performance (RNP) authorization(s), as applicable. This guide is optional. However, we recommend its use because when the applicant has filled it out correctly and has included sufficient supporting documentation, it will help expedite the application process. Note that we provide an “Application Checklist” at paragraph [A.3](#).

For new applications, operators should schedule a pre-application or “kickoff” meeting/teleconference with your Flight Standards (FS) Office. Your Principal Inspector (PI) will provide the appropriate guidance.



We encourage you to contact your PI for a “kick-off” meeting prior to submitting an application to help you through the process and answer any questions.



1.1 Applicability

This guide may be used by certificate holders/operators/program managers conducting aircraft operations under 14 CFR Parts 91K, 121, 121/135, 125 (including Part 125 Letter of Deviation Authority (LODA) holders), and 135.

1.2 Terms and Symbols

Current AC: The current AC is indicated by “()” in place of the version letter. For example AC 90-105A will be shown in this guide as AC 90-105().

Identically Equipped: “Identically equipped” means that an aircraft are identical in every way including MMS, avionics, software, flight deck configuration, and performance as the initial authorization. Minor differences may be accepted as “identically equipped” on a case by case basis by the PI.

Long-Range Navigation System (LRNS): By definition, an LRNS includes an electronic navigation unit that computes for the pilots steering commands to fly the intended route of flight. In many transport aircraft, the electronic navigation unit is the flight management computer (FMC), the term used throughout in this document. An LRNS also needs a navigation sensor such as an Inertial Reference System (IRS) and/or a Global Navigation Satellite System (GNSS). Your airplane flight manual may refer to the electronic navigation unit by a different term.

Operator: An “operator” refers to an operator, certificate holder, program manager, and operator/company.

Principal Inspector (PI): 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).

1.3 Aircraft/Fleet

This application guide is for submitting a single-make, model and series (MMS) of an aircraft. If an operator who already holds a B036 or B054 authorization submits an application to add identically equipped MMS aircraft to that authorization, then no additional PI review and authorization is necessary (see paragraph 1.4). For clarifications on what constitutes identically equipped MMS aircraft, consult with your PI and/or specialists in the Flight Technologies and Procedures Division (AFS-400). Use separate application(s) for different MMS aircraft or for those **not** identically equipped.

1.4 Upgrades in Aircraft or Equipage or adding to Aircraft Fleet

For those operators with an existing B036 authorization, this guide may be used to update FMS and/or avionic components and/or RNP capability. This application guide may also be used to add additional aircraft to your current authorization. See the selection of these options in [Section 2](#).





1.5 B036, Oceanic and Remote Continental Navigation using Multiple LRNS

B036 serves a dual purpose; it authorizes operations in oceanic and remote continental airspace using multiple LRNS and authorizes Required Navigation Performance (RNP) 2, RNP 4 or RNP 10 navigation specifications. An operator receives a B036 based on their aircraft's RNP capability and after demonstrating their overall competence for oceanic and remote continental operations. RNP 4 and RNP 10 are strictly oceanic and remote continental navigation specifications. RNP 2 has both a “domestic” (continental) authorization and an oceanic/remote continental authorization.

While B036 authorizes IFR en route operations in oceanic and remote continental airspace on a worldwide basis, it also serves as a prerequisite for other oceanic authorizations in the Atlantic and Pacific. For example, operators will need to apply for B039 to operate in North Atlantic High Level (NAT HLA) airspace and obtain a B037 authorization to operate in Central East Pacific (CEP). See [Table 1-2](#) and [Table 1-3](#) for additional authorizations that you may require for your operation.

As part of the bundling concept described in [AC 90-105\(\)](#), B036 includes advanced RNP (A-RNP) which is defined in the United States as having the operational and functional capability of performing scalability, radius to fix (RF), and parallel offset. However, ICAO does not require specific approval for A-RNP capabilities in oceanic areas (high seas).

1.6 B037, Operations in Central East Pacific (CEP) Airspace

A B037 OpSpec/MSpec/Part 125 LOA authorizes operators to fly their aircraft within the Central East Pacific (CEP) airspace. The CEP is an organized route system between Hawaii and the West Coast of the United States. RNP 10 is required but operators are encouraged to pursue RNP 4 authorization to be eligible for more favorable routing and altitudes. The PI will ensure your procedures and training includes topics relevant to CEP airspace. **A B036 authorization is a prerequisite for a B037 authorization.** For this authorization, fill out the form in [Section 2](#) and attach documentation requested in Section 4, [4.4](#) and Section 5, [TNG-2](#).

1.7 B038, Operations in North Pacific (NOPAC) Airspace

A B038 OpSpec/MSpec/Part 125 LOA authorizes operators to fly their aircraft within North Pacific (NOPAC) airspace. The NOPAC Area of Operation lies within the Anchorage and Tokyo flight information regions (FIR). RNP 10 is required to fly on NOPAC routes but operators are encouraged to pursue RNP 4 authorization to be eligible for more favorable routing and altitudes. Your procedures and training program should include topics relevant to NOPAC airspace. **A B036 authorization is a prerequisite for a B038 authorization.** For this authorization, fill out the form in [Section 2](#) and attach documentation requested in Section 4, [4.3](#) and Section 5, [TNG-2](#).

1.8 B039, Operations in North Atlantic (NAT) High Level Airspace (HLA)

A B039 OpSpec/MSpec/Part 125 LOA authorizes aircraft operations within the airspace designated by the International Civil Aviation Organization (ICAO) as North Atlantic (NAT) High Level Airspace (HLA). This area extends across the Atlantic between flight level (FL) 285 and FL 420 within oceanic control areas of Bodo Oceanic, Gander Oceanic, New York Oceanic East, Reykjavik, Santa Maria, and Shanwick, excluding the Shannon and Brest Ocean Transition Areas. RNP 10 is required but operators are encouraged to pursue RNP 4 authorization to be eligible for more favorable routing and altitudes. Your procedures and training program should include topics relevant to NAT HLA airspace. **A B036 or a B054 authorization is a prerequisite for a B039.** For this authorization, fill out the form in [Section 2](#) and attach documentation requested in Section 4, [4.4](#) and Section 5, [TNG-2](#).



1.9 B054, Oceanic and Remote Airspace Navigation using a Single LRNS

B054 authorizes 14 CFR Parts 121, 125 and 135 operators to navigate in oceanic and remote continental airspaces using only a single LRNS with an accuracy of Required Navigation Performance (RNP)10. Part 91K operators do not need a MSpec B054 but must adhere to § [91.511](#). Refer to the following applicable regulations that define B054 stipulations:

- **Part 91K:** § [91.511](#)(f), Communication and navigation equipment for overwater operations.
- **Part 121:** § [121.351](#)(c), Communication and navigation equipment for extended over-water operations and for certain other operations
- **Part 125:** § [125.203](#)(f), Communication and navigation equipment.
- **Part 135:** § [135.165](#)(g), Communication and navigation equipment: Extended over-water or IFR operations



1.10 Guidance Documents

Refer to the following suggested guidance for oceanic and remote continental operations:

- [*AC 91-70\(\)*, *Oceanic and Remote Continental Airspace Operations*](#). This document provides detailed guidance for operators planning flights in oceanic and remote continental airspace. As is true for all ACs, [AC 91-70](#) is not mandatory but does contain internationally accepted best practices. You may choose something other than [AC 91-70](#) as a source of guidance, but your inspector will expect your procedures and training to cover the subject matter of this AC.
- [*AC 90-105\(\)*, *Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace*](#). This AC is the primary source of guidance on aircraft qualification, operating procedures and pilot training/knowledge on RNP operations. It provides the aircraft eligibility requirements for RNP 2, 4 and 10. The level of detail on aircraft requirements provided in [AC 90-105](#) is primarily for aircraft manufacturers but you may be required to provide Original Equipment Manufacturer (OEM) statements from your Airplane Flight Manual (AFM) and other documents to verify aircraft eligibility.



- [AC 20-138\(\)](#), *Airworthiness Approval of Positioning and Navigation Systems*. As indicated by the title, this is primarily manufacturer guidance for airworthiness of position and navigation systems.
- [AC 20-150\(\)](#), *Airworthiness Approval of Satellite Voice (SATVOICE) Equipment Supporting Air Traffic Service (ATS) Communication*. This advisory circular (AC) provides guidance on airworthiness approval for designers, manufacturers, and installers of Satellite Voice (SATVOICE) equipment supporting air traffic service (ATS).

1.11 Instructions

1. **Fill-in-the-Blank.** Use the fill-in-the-blank portion of this guide, [Section 2](#), and include a letter or email of request explaining your intentions. [Table 1-2](#) provides a list of the authorizations addressed by this application guide.
2. **Adding Aircraft.** If adding aircraft to an existing authorization(s) that are not the same make/model/series, or identically equipped, then fill out a separate application for each aircraft or fleet and include [Section 3](#). See [paragraph 1.4](#).
3. **Other Authorizations.** [Table 1-2](#) provides a reference of other OpSpecs/MSpecs/Part 125 LOAs that may also may be needed in conjunction with the B036 or B054 authorization. Contact your PI for more information.
4. **Attachments.** With each attachment, include the corresponding reference number (e.g. SOC-1) next to each excerpt in a .pdf format and include the document title, page number and paragraph number. If an item is not applicable, provide a brief explanation as to why it does not apply.
5. **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.





Table 1-2: Summary of Authorizations for Oceanic Operations

Operation	Part 91K MSpec	Part 121 OpSpec	Part 125 OpSpec	Part 125M LOA	Part 135 OpSpec	Guidance Remarks
CPDLC	A056	A056	A056	A056	A056	AC 90-117() , NAT OPS bulletins: 2019_003Rev03 2020_001Rev01
ADS-C	A056	A056	A056	A056	A056	AC 90-117()
PBCS	A056	A056	A056	A056	A056	AC 90-117()
RNP 2	B036	B036	B036	B036	B036	AC 90-105()
RNP 4	B036	B036	B036	B036	B036	AC 90-105()
RNP 10	B036	B036 B054	B036 B054	B036 B054	B036 B054	AC 90-105()
Central East Pacific (CEP)	B036 B037	B036 B037	B036 B037	B036	B036 B037	AC 91-70() , ICAO Doc 7030
North Pacific (NOPAC)	B036 B038	B036 B038	B036 B038	B036	B036 B038	AC 91-70() , ICAO Doc 7030
North Atlantic (NAT) High Level Airspace (HLA)	B036 or B054 B039	AC 90-105() , AC 91-70() , ICAO Doc 7030 , NAT OPS Bulletins , NAT Doc 007				
Areas of Magnetic Unreliability (AMU)	B040	B040	B040		B040	AC 91-70()
North Atlantic Operations with Two-Engine Airplanes Under Part 121		B041				AC 90-105() , AC 91-70() , ICAO Doc 7030 , NAT OPS Bulletins , NAT Doc 007
Extended Operations (ETOPS)		B342 B344			B342 B344	Part 121, § 121.161 , Part 135, §135.364 , Part 135, Appendix G , AC 120-42() , AC 135-42()
Extended Overwater Operations in Certain Geographical Areas using Single LRNS		B054	B054	B054	B054	AC 90-105() , AC 91-70()
RVSM	B046 D092	B046 D092	B046 D092	B046 D092	B046 D092	AC 91-85()
Authorized Areas of En Route Operations, Limitations, and Provisions	B050	B050	B050		B050	



Operation	Part 91K MSpec	Part 121 OpSpec	Part 125 OpSpec	Part 125M LOA	Part 135 OpSpec	Guidance Remarks
North Polar Operations	B055	B055 B342 B344	B055		B055	Part 135, § 135.98 Part 121, § 121.7 (defines Polar area) Part 121 § 121.99 AC 91-70() AC 120-42() AC 135-42()

Table 1-3: Titles of OpSpecs/MSpecs/LOAs used in Table 1-2

Designation	Title
A056	Data Link Communications
B036*	Oceanic and Remote Continental Navigation using Multiple Long-Range Navigation Systems (LRNS)
B037*	Operations in Central East Pacific (CEP) Airspace
B038*	Operations in North Pacific (NOPAC) Airspace
B039*	Operations in North Atlantic High Level Airspace
B040	Operations in Areas of Magnetic Unreliability
B041	North Atlantic Operation (NAT/OPS) with Two-Engine Airplanes Under Part 121
B046	Operations in Reduced Vertical Separation Minimum (RVSM) Airspace
B050	Authorized Areas of En Route Operations, Limitations, and Provisions
B054*	Oceanic and Remote Airspace Navigation Using a Single Long-Range Navigation System
B055	North Polar Operations
B342	Extended Operations with Two-Engine Airplanes under Part 121 or 135
B344	Extended Operations in Passenger-Carrying Airplanes with More than Two Engines, Under Parts 121 or 135
D92	Airplanes Authorized for Operations in Designated Reduced Vertical Separation Minimum Airspace

*These authorizations are addressed in this application guide.





Intentionally Blank



Section
2

Section 2: Application Form

2.1 Application Type

Date: Letter or Email of Request is Attached

If you made an incorrect selection, reset form by clicking this button:

Select one of the following application types below:

Initial OpSpec/MSpec/part 125 LOA (i.e. B036, B037, B038, and/or B039)
Use the yellow section below to select the specific or combination of authorizations.

Upgrading FMS /Avionics/RNP. Select existing OpSpec/MSpec/part 125 LOA
Applying for RNP
(For avionics or RNP upgrades complete [Section 3](#))

Adding a Different MMS or not Identically Equipped Aircraft to:

Note: If adding an identically equipped aircraft, no application guide is needed. Just inform your PI of the additional aircraft. “Identically equipped” means that an aircraft are identical in every way including MMS, avionics, software, flight deck configuration, and performance as the initial authorization. Minor differences may be accepted as “identically equipped” on a case by case basis by the PI.

Select only one of these options:

- B036
- B036 and B054
- B054

Select none, one, or more of these options:

- B037
- B038
- B039
- B050



2.2 Contact Information

Company/Operator Name:

FAA Location Designation:

Operator 4-Character Designator:

14 CFR Part:

Address:

Suite:

Country:

City:

State:

/ Province:

Zip Code:

Point of contact for this application:

Contact Name:

Contact Phone:

Contact Email:

FAA POI:

Principal Inspector (PI) First Name:

Principal Inspector (PI) Last Name:

PI Email Address:

PI Phone:



2.3 Description of Operation

Briefly describe your operation as it relates to oceanic and remote continental airspace. Include any other possible Operation Specifications/Management Specifications/Letters of Authorization that you intend to obtain.

2.4 Aircraft/Fleet and Navigation Equipage

B036 requires a minimum of two LRNS. It is important to emphasize here that a single FMC receiving navigational inputs from two or more independent sources (e.g. GPS, inertial system) is considered only a single LRNS. For oceanic RNP 2, you must have at least two LRNS with each system receiving a GNSS source. For RNP 4, at least one of the two LRNS must have a GNSS source. For RNP 10, both LRNS may have any combination of GNSS and inertial sources. Though not a part of the B036 or B054 authorization, the aircraft’s communication systems must be adequate for over-water operations.

Aircraft Registration and Serial Number(s)

Make:

Model:

Series:





2.5 Avionics

Table 2-1: Communication/Navigation/Surveillance (CNS) Equipment Information

Relevant regulations are Part 91, §§[91.511](#) and [91.703](#); Part 135, §[135.165](#); and Part 121, §[121.351](#). Your aircraft must have voice two-way radio communication that is adequate for maintaining a continuous air-to-ground voice communication watch on the appropriate communication channel in order to comply with [ICAO Annex 2](#), paragraph 3.6.5.

Number Installed	Type	Manufacturer(s)	Model(s)	Additional Notes/Limitations	ATC Flight Plan Field 10A/B	ATC Flight Plan Field 18
	FMS					
	GNSS					
	IRS					
	HF					
	SATVOICE					
	TCAS					
	FANS					

Notes:

1. Reference [Appendix 4](#) of the US Aeronautical Information Manual or [FAA Flight Planning Information](#)
2. Approved SATVOICE must be installed in accordance with [AC 20-150\(\)](#)
3. For the IRS row, include RNP time limit in the “Additional Notes/Limitations” column.



2.6 Sample Table 1

Table 2-2 is a representation of Table 1 from the actual B036 Opspec/MSpec/LOA authorization. Table 1 lists the major components of an LRNS, which are considered to be the flight management computer (FMC) and the navigation sensor(s) (Global Navigation Satellite System (GNSS) and/or inertial navigation system (INS)). B036 uses “bundling” which is a hierarchy of navigation capabilities starting with the most stringent and combining it with lesser capabilities. For example, if your aircraft is capable of A-RNP and RNP 4 then you would also be authorized for A-RNP, RNP 4 and RNP 10. RNP 2 can also be authorized, though it is not currently in use for oceanic operations.

- For applications for both the B036 and the B054, provide two corresponding tables. Include the quantity of the components in parentheses immediately prior to the manufacturer name (e.g., “(2) Honeywell”).
- For a B054 application, use the table below and select RNP 10 for the navigation specification. For the Manufacturer and Model/ HW Part #, column, provide the model name or hardware part number of the LRNS. Make entries for each of the major components of the LRNS, and include the quantity in parentheses immediately prior to the manufacturer name (e.g., “(2) Honeywell”).
- Hardware part number is optional. Inspectors can list a model name instead of a part number, for the hardware components in Table 1. Continued use of a part number is also acceptable.

Table 2-2: Sample Authorization Table – Authorized Airplane(s), Equipment

Airplane M/M/S	Long-Range Navigation Systems (LRNS)			Navigation Specification(s)	Additional Capabilities	Limitations	RNP Time Limits
	Manufacturer	Model/HW Part #	Software Part/ Ver #				



Intentionally Blank



Section
3

Section 3: Aircraft Eligibility Attachments

For each attachment, identify the necessary page(s)/paragraph(s) to establish compliance. It is not necessary to attach an entire document if the excerpted pages adequately can establish compliance. Include the corresponding reference numbers with each attachment in a separate PDF document. Specific airworthiness guidance is provided in [AC 20-138\(\)](#).

3.1 Statement of Compliance (SOC)

Check Box	Reference Number	SOC Attachments
	SOC-1	<p>Attach a page/paragraph showing a SOC, for your specific aircraft, indicating the RNP value, with installation in accordance with Advisory Circular (AC 20-138()), Airworthiness Approval of Positioning and Navigation Systems. The SOC may be in your Airplane Flight Manual (AFM), Airplane Flight Manual Supplement (AFMS), pilot’s operating handbook (POH), avionics operating manual or manufacturer’s service letter. This SOC may be provided from the manufacturer, the entity that owns the design approval for the installed navigation systems or an alternative authority approved by the FAA.</p> <p><i>Source: AC 90-105(), Appendices: E,F, and G, paragraphs: E.2.1, F.2.1, G.2.1</i></p>





3.2 Equipage:

Check Box	Reference Number	Equipage Attachments
	EQP-1	<p>RNP 2:</p> <p>If you are applying for Oceanic RNP 2, then provide documentation that your aircraft has at least two independent LRNS with at least two independent GNSS navigation sensors. These systems must be installed in accordance with AC 20-138().</p> <p>Note: Qualifying documentation showing equipment installation should be identified with tail/serial number and be submitted via maintenance log, equipment list, CAMP report or similar reference.</p> <p><i>Source: AC 90-105(), paragraph E.3</i></p>
	EQP-2	<p>RNP 4:</p> <p>If you are applying for RNP 4, then provide documentation that your aircraft has at least two independent LRNS. Global Navigation Satellite System (GNSS) must be used as either a stand-alone navigation system, as one of the sensors in a multi-sensor system, or as part of an integrated GNSS/inertial system. These systems must be installed in accordance with AC 20-138().</p> <p>Note 1: Not applicable for B054.</p> <p>Note 2: Qualifying documentation showing equipment installation should be identified with tail/serial number and be submitted via maintenance log, equipment list, CAMP report or similar reference.</p> <p><i>Source: AC 90-105(), paragraph F.2</i></p>
	EQP-3	<p>RNP 10:</p> <p>B036</p> <p>Provide documentation that your aircraft has at least two independent LRNS receiving inputs from GNSS or inertial navigation sources.</p> <p><i>Source: AC 90-105(), paragraph G.2-G.7</i></p> <p>B054</p> <p>Provide documentation that your aircraft has one LRNS receiving inputs from GNSS or inertial navigation sources.</p> <p>Note 1: All navigation systems must be installed in accordance with AC 20-138().</p> <p>Note 2: Qualifying documentation showing equipment installation should be identified with tail/serial number and be submitted via maintenance log, equipment list, CAMP report or similar reference.</p>



Check Box	Reference Number	Equipage Attachments
	EQP-4	<p>As defined by AC 90-105(), advanced RNP (A-RNP) is the operational and functional capability of performing:</p> <ol style="list-style-type: none"> 1. Scalability, 2. Radius to Fix (RF), and 3. Parallel offset. <p>If your AFM or other OEM documentation includes all of these capabilities, provide the excerpt(s) from those documents. If your aircraft is not capable of all from the above list, then enter N/A for this attachment reference number.</p> <p>Note: ICAO does not require specific approval for A-RNP for oceanic (high seas) areas.</p> <p><i>Source: AC 90-105(), Appendix H, paragraph H.3</i></p>
	EQP-5	<p>Provide documentation if your aircraft has any of the following additional capabilities:</p> <ul style="list-style-type: none"> • Fixed Radius Transition (FRT) and/or • Time of Arrival Control (TOAC) <p>Note: These capabilities are not currently used in United States domestic airspace but may be utilized internationally.</p> <p><i>Source: AC 90-105(), Appendix H, paragraph H.3</i></p>
	EQP-6	<p>Provide documentation that if a SATVOICE system is to be used as MEL relief for an inoperative HF radio, that it is installed in accordance with AC 20-150B (or subsequent edition) and include appropriate Field 10A code (M1/M3; see FLP-1). MEL relief is only available for approved systems.</p> <p>Note: Aircell systems, and systems with only a handset, are not compliant with AC 20-150() and do not qualify as SATVOICE.</p>
	EQP-7	<p>Provide installation documentation that your aircraft is equipped with TCAS II, V7.1.</p> <p>Note: Requirement is for flights operating in European Union (EU) and in North Atlantic (NAT).</p> <p><i>Sources: Commission Regulation No 1332/2011, 'ACAS II Regulation and ICAO Regional Supplementary Procedures (Doc 7030), NAT para 5.3.1.</i></p>



Intentionally Blank



Section 4: Operational Attachments

Please attach your International Operations Manual (IOM), or relevant sections of your General Operations Manual (GOM) if you don't have a stand-alone IOM, in accordance with item IOM-1 below. Please highlight the page(s)/paragraph(s) to address each of the items OPS-1 through OPS-10 below, and if able, hyperlink the reference number to the appropriate section using the Adobe Acrobat attachment feature. Please also enter the page/paragraph number(s) from your IOM (or other supporting document/excerpt) in the provided text fields in each of blocks OPS-1 through OPS-10.

Policies and procedures for pilots and operational staff involved in oceanic and remote continental operations as well as oceanic RNP operations are established in accordance with [AC 91-70\(\)](#) and [AC 90-105\(\)](#). This section includes the minimum operational requirements in the following areas:

1. Operational Procedures
2. Master Minimum Equipment List/Minimum Equipment List (MMEL/MEL)
3. Specific Areas of Operation (i.e. CEP, NOPAC, and NAT HLA)
4. Flight Plans





4.2 Operational Procedures

Check Box	Reference Number	Operational Attachments
	OPS-1	<p>Provide IOM/procedural references of RNP system procedures and how those procedures are controlled. Include references for flight manual checklist(s) for LRNS operation.</p> <p><i>Source: AC 90-105(), Chapter 7, paragraph 7.5.1., Item 2 and 3</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>
	OPS-2	<p>If your aircraft is equipped with Global Navigation Satellite System (GNSS) only systems, provide IOM/procedural references of an approved GNSS availability prediction program ensuring the requisite availability of the GNSS Fault Detection and Exclusion (FDE) function.</p> <p><i>Source: AC 90-105(), Appendices: E, F, and G, paragraphs E.8.2.1, F.4.3.1 and G.7.1</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>
	OPS-3	<p>Provide IOM/procedural references of pilot procedures for the manual entry of waypoints (i.e., latitude and longitude) for <u>flexible route structures</u> if applicable to your operation. Include references of how such manually entered points are displayed on the navigation display and in the FMS (i.e., how they are labeled/named).</p> <p><i>Source: AC 90-105(), Appendices: E, F, and G, paragraphs: E.9.5, F.8.3, and G.11.3.1</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>
	OPS-4	<p>Provide IOM/procedural references of LRNS preflight procedures and pilot procedures to confirm the correct route is loaded.</p> <p><i>Source: AC 90-105(), Appendix F and G, paragraph: F.8.3.1 and G.11.3.2; AC 91.70(), Chapter 6, paragraph 6.3, Chapter 7, paragraph 7.4.2</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>



Check Box	Reference Number	Operational Attachments
	OPS-5	<p>Provide IOM/procedural references of operational procedures for performing Strategic Lateral Offset Procedure (SLOP).</p> <p><i>Source: AC 90-105(), Appendices: E, and F: paragraph E.9.5.8 and F.8.3.8; AC 91-70(), paragraph 6.4.3.4.2, US-AIP and FAA International Notices</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>
	OPS-6	<p>For multi-sensor systems, provide IOM/procedural references of pilot procedures to verify the correct sensor is being used for position computation.</p> <p><i>Source: AC 90-105(), Appendices: E, F, and G, paragraphs: E.9.6, F.8.3.11, and G.11.3.10</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>
	OPS-7	<p>Provide IOM/procedural references of pilot cross-checking procedures to identify navigation errors in sufficient time to prevent an inadvertent deviation from ATC-cleared routes. Your procedures should include cross-checking aircraft position at a point approximately 10 minutes after oceanic waypoint passage using one of the following methods:</p> <ul style="list-style-type: none"> • Plotting or e-plot on a chart or • Use of aircraft FMS-driven navigation displays and indications <p><i>Source: AC 90-105(), Appendices E and F, paragraphs: E.9.5.6 and F.8.3.5, ; AC 91.70(), Chapter 6, paragraph 6.4.8.2 ; guidance for use of Electronic Flight Bag (EFB) plotting applications is in Note under paragraph 6.3.1.11.2.</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>
	OPS-8	<p>Provide your checklist used for oceanic operations.</p> <p><i>Source: AC 91-70(), Appendix D</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>



Check Box	Reference Number	Operational Attachments
	OPS-9	<p>Provide IOM/procedural references of emergency and contingency procedures. These procedures may be due to:</p> <ul style="list-style-type: none"> • Inability to comply with assigned clearance due to meteorological conditions, aircraft performance, or pressurization failure. • En route diversion across the prevailing traffic flow. • Loss of, or significant reduction in, the required navigation capability when operating in airspace where the navigation performance accuracy is a prerequisite to the safe conduct of flight operations. <p>Include references of contingency procedures for performing turn backs, diversions, and weather deviations.</p> <p><i>Source: AC 91-70(), Appendix F, US-AIP</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>
	OPS-10	<p>Provide documentation of your established database program that addresses the following:</p> <ul style="list-style-type: none"> • Pilot procedures to confirm at system initialization that the navigation database is current • Procedures for reporting discrepancies that invalidate a procedure (e.g. database errors) to the navigation database supplier along with procedures to prohibit the use of an invalid procedure. <p><i>Source: AC 90-105(), Chapter 10, paragraph 10.7.</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., “IOM, paragraphs 3.5 and 3.6.”</i></p>

4.3 MEL

Check Box	Reference Number	MEL Attachment
	MEL-1	<p>Provide Long-Range Communication System (LRCS) and LRNS documentation from sections 23 and 34, including M & O procedures. Operators can use CPDLC compliant with RCP 240 as relief for one inoperative HF radio, as long as one HF radio remains operative.</p> <p><i>Source: Part 91, §91.213, AC 90-105(), Chapter 8, paragraph 8.3; Appendix E, paragraph E.8.2; Appendix F, paragraph F.7.2.</i></p>



4.4 Specific Areas of Operation

B037, Operations in Central East Pacific (CEP) Airspace

If you are applying for B037, then include your operational procedures that relate to operating within CEP airspace.

Note: Operators must have been issued or are in the process of applying for a B036 in order to be considered for B037. This application guide can be used to apply for both authorizations.

Check Box	Reference Number	CEP Attachment
	CEP-1	Provide operating procedures that are specific to operating in CEP airspace. Leave unchecked if this attachment does not apply. <i>Sources: U.S. AIP, ENR 7.4, AC 91.70()</i> <i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., "IOM, paragraphs 3.5 and 3.6."</i>

B038, Operations in North Pacific (NOPAC) Airspace

If you are applying for B038, then include your operational procedures that relate to operating within NOPAC airspace.

Note: Operators must have been issued or are in the process of applying for a B036 in order to be considered for B038. This application guide can be used to apply for both authorizations.

Check Box	Reference Number	NOPAC Attachment
	NOPAC-1	Provide operating procedures that are specific to operating in NOPAC airspace. Leave unchecked if this attachment does not apply. <i>Sources: U.S. AIP, ENR 7.4, AC 91.70()</i> <i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., "IOM, paragraphs 3.5 and 3.6."</i>





B039, Operations in North Atlantic (NAT) High Level Airspace (HLA)

If you are applying for B039, then include your operational procedures that relate to operating with NAT HLA airspace.

Note: Operators must have been issued or are in the process of applying for a B036 in order to be considered for B039. This application guide can be used to apply for both authorizations.

Check Box	Reference Number	NAT HLA Attachment
	HLA-1	<p>Provide operating procedures that are specific to operating in NAT HLA airspace. Leave unchecked if this attachment does not apply.</p> <p><i>Sources: U.S. AIP, ENR 7, NAT Doc 007, NAT Ops Bulletins</i></p> <p><i>Applicant notes/references. Please provide the name of the supporting document as well as page(s)/paragraph(s) references, e.g., "IOM, paragraphs 3.5 and 3.6."</i></p>

4.5 B050, Authorized Areas of En Route Operations, Limitations, and Provisions

If you are applying to add authorized areas to your B050, then include a draft of the new B050 that includes the requested authorized areas and associated reference paragraphs, as well as any notes that may apply.

Note: Operators should coordinate with their PI if they do not have access to the [Web Based Operations Safety System](#) (WebOPSS).

Check Box	Reference Number	Authorized Areas Attachment
	B050-1	<p>Provide a draft copy of your B050 authorization that includes requested authorized areas and associated reference paragraphs, as well as any notes that may apply.</p> <p><i>Source: Web Based Operations Safety System (WebOPSS)</i></p> <p><i>Applicant notes/references.</i></p>





4.6 Flight Plans

Check Box	Reference Number	Flight Plan Attachment
	FLP-1	<p>Demonstrate the appropriate use of flight plan designators by completing a sample FAA flight plan (Form 7233-4) of a representative oceanic crossing through the requested airspace. (e.g., if requesting B039, route of flight should be through NAT HLA, between FL 285 and FL 420) Include the following:</p> <ul style="list-style-type: none"> ➔ A sample Master Document OFP/crew flight plan/computer flight plan. ➔ A sample ATC flight plan (FAA Form 7233-4) with codes entered in Fields 10 and 18 supported by installed and authorized equipment (EQP section) (e.g., A056 authorization required for Item 10a Code P2 (RCP 240) and C384 authorization required for Item 18 Code T1 or T2 (RNP AR approach with and without RF, respectively)). ➔ Equal Time Point (ETP) analysis for the oceanic flight plan. ➔ Fuel planning in accordance with ICAO Annex 6, Part II as applicable. ➔ Additionally, provide the following, as applicable: <ul style="list-style-type: none"> • Sample Track Message, normally provided with Operational Flight Plan (OFP), and • Sample graphic depiction of tracks and Equal Time Points (ETPs) normally provided with OFP - Sample applicable NOTAMS, GPS NOTAMS and RAIM prediction. <p>Below are resources to aid in your flight planning:</p> <ul style="list-style-type: none"> • AC 91-70() (addresses Master Document) • FAA Form 7233-4 • FAA Flight Planning Information





Intentionally Blank



Section 5: Training Attachments

This section is to provide documentation from your training program that addresses the operational practices in oceanic and remote continental operations. For each attachment, provide the relevant page(s)/ paragraph(s) reference to establish compliance. It is not necessary to attach an entire document if the excerpted pages can adequately establish compliance. Please highlight the requested documentation and if able, hyperlink the reference number to the appropriate section using the Adobe Acrobat attachment feature.

Check Box	Reference Number	Training Attachments
	TNG-1	<p>Provide documentation that your training program addresses the operational practices in oceanic and remote continental operations as well as oceanic RNP operations. Training must include long-range navigation equipment and procedures as part of the overall training program (e.g., initial, upgrade, or recurrent training for pilots, operational control personnel, and maintenance personnel). Training curricula should be in accordance with AC 90-105() and AC 91-70(). If training will be conducted by a contract training provider in accordance with 14 CFR §91.1075, §121.402, §125.296, §135.324, that training provider must be approved on the operator’s OpSpec/MSpec/ part 125 LOA A031.</p> <p><i>Source: AC 90-105(), Chapter 8, paragraphs 8.2.2 and 8.4; AC 91-70(), Chapter 3, paragraph 3.2</i></p>
	TNG-2	<p>This attachment is only for those operators applying for B037, B038, and/or B039. Select one or more of the authorizations below.</p> <ul style="list-style-type: none"> B037 OpSpec/MSpec/ part 125 LOA, Operations in Central East Pacific (CEP) airspace B038 OpSpec/MSpec/ part 125 LOA, Operations in North Pacific (NOPAC) airspace B039 OpSpec/MSpec/ part 125 LOA, Operations in North Atlantic (NAT) High Level Airspace (HLA) <p>For any or all the above, provide the following:</p> <p>Provide documentation from your training program that includes these specific area(s) of operation. The training and pilot procedures must address responses to a partial or complete loss of long-range navigation capability.</p>



Intentionally Blank



Section
6

Section 6: Additional Attachments/Information

6.1 Additional PI Requested Documentation

This section is included for any additional information that may be requested by your PI. For each attachment, provide the necessary page(s)/paragraph(s) to establish compliance. It is not necessary to attach an entire document if the excerpted pages can adequately establish compliance. Include the corresponding reference number with the attachment.

Check Box	Reference Number	Additional PI Requested Documentation
	POI-1	If requested, attach additional documentation requested by your PI.

6.2 Document Review

Check each document below to indicate you are knowledgeable with each.

Check Box	Document List
	AC 90-105() , Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace
	AC 20-138() , Airworthiness Approval of Positioning and Navigation Systems.
	AC 91-70() , Oceanic and Remote Continental Airspace Operations
	United States Aeronautical Information Publication (AIP), Part 2, ENR 7, Oceanic Operations .
	Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869), ICAO.
	State Aeronautical Information Publications (AIP).
	State Notices to Air Missions (NOTAM). (U.S. Link)
	FAA chart supplements , Oceanic Errors Safety Bulletin (OESB) (NAT OPS Bulletins).



Intentionally Blank

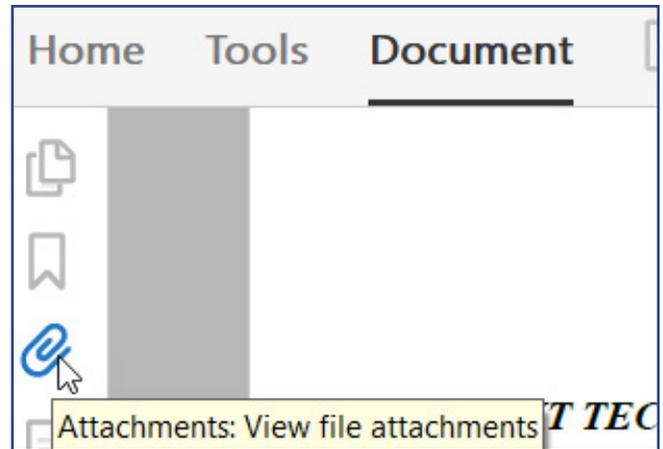


Appendix A | Final Application Preparations

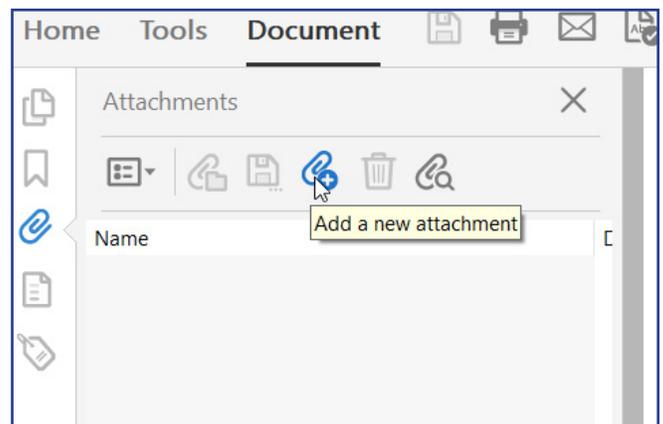
A.1 How to Attach Documents using Adobe Acrobat

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 and is highly recommended. If do not have Acrobat, then use the naming convention in paragraph [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 attach to your application.

Name	Date modified	Type	Size
DAT-1	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
DCT-1	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
EQP-1	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
EQP-2	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
EQP-3	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
EQP-4	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
OPS-1	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
OPS-2	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
OPS-3	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
OPS-4	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
PRF-1	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB
TMP-1	4/5/2021 3:22 PM	Adobe Acrobat D...	15,378 KB

4. Make sure you have added all the necessary files including any addendum attachments needed for the Op-Specs/MSpecs/part 125 LOAs which are to be included in your application.

Attachments

Name

- DAT-1.pdf
- DCT-1.pdf
- EQP-1.pdf
- EQP-2.pdf
- EQP-3.pdf
- EQP-4.pdf
- OPS-1.pdf
- OPS-2.pdf
- OPS-3.pdf
- OPS-4.pdf
- PRF-1.pdf
- TMP-1.pdf
- VRT-1.pdf
- VRT-2.pdf



A.2 Naming Convention

Use the following file naming convention when submitting this document for B036, B037, B038, B039, and B054 applications and for the folder if using the Acrobat option to attach documents. The following examples are for a B036 application and attachments:

B036_Application_Company/Name_Date(XX_XX_XXXX)_Version_Number_(VX)

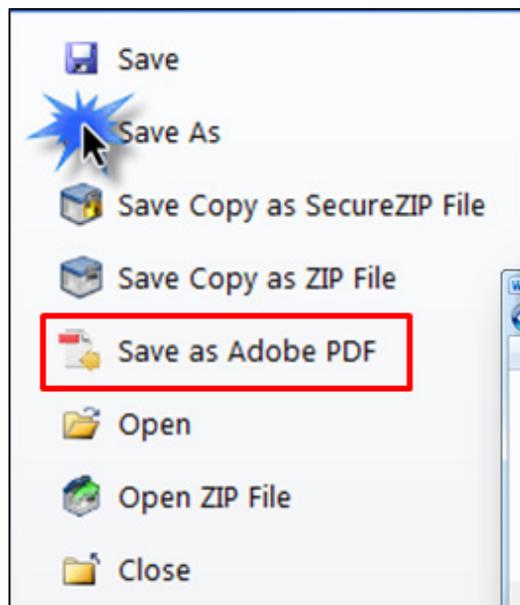
Example: B036_Application_ABCAirlines_02_29_2016_V2

Use the following file naming convention when submitting your attachments.

B036_Attachments_Company/Name_Date(XX_XX_XXXX)_Version_Number_(VX)

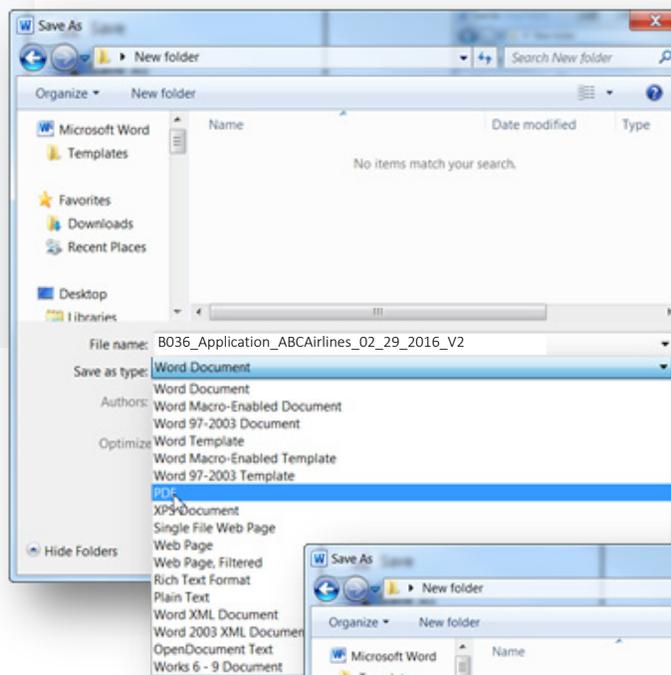
Example: B036_Attachments_ABCAirlines_02_29_2016_V2

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.



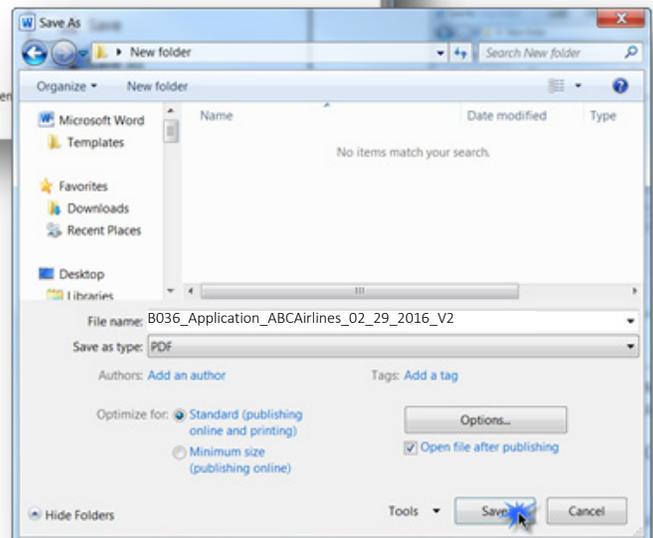
Step 1:

In MS Word, select “Save As” under File Menu or select “Save as Adobe PDF” and skip Step 2



Step 2:

Select “PDF” under “Save as type”



Step 3: Saving file with naming convention.

Use the following naming convention with underlines “_” as shown:

B036_Application_Your_Company/Name_Date_Version

Example:

B036_Application_ABCAirlines_02_29_2016_V2



A.3 Application Checklists

B036 Checklist *(Also, for adding a different MMS aircraft or not identically equipped to existing B036)*

Ensure all the applicable items have been completed.

Attach your letter or email of request along with all the documents below for your PI.

[Section 2](#), Application Form,

[Section 3](#), Aircraft Eligibility Attachments,

[Section 4](#), Operational Attachments,

[Section 5](#), Training Attachments, and

[Section 6](#), Additional Attachments/Information.

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

B037, B038, and B039 Checklist

[Section 2](#), Application Form,

[Section 4](#), Operational Attachment, [4.3](#) as appropriate, and

[Section 5](#), Training Attachments, [TNG-2](#), as appropriate.





Appendix B: Definitions and Acronyms

B.1 Definitions

A

Air Traffic Control (ATC) Service:

1. Area Control Service,
2. Approach Control Service, and
3. Airport Control Service.

Area Navigation (RNAV). A method of navigation (formerly known as “Random Navigation”) which permits aircraft operation on any desired flightpath within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Area Navigation (RNAV) System. A navigation system which permits aircraft operation on any desired flightpath within the coverage of ground or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these. A RNAV system may be included as part of a flight management system (FMS).

D

Distance Measuring Equipment (DME) DME/DME (D/D) RNAV. Refers to navigation using DME ranging from at least two DME facilities to determine position.

DME/DME/Inertial (D/D/I) RNAV. Refers to use of DME/DME positioning augmented by integration with an aircraft’s inertial navigation system(s) to support RNAV or RNP operations. D/D/I can provide more flexibility and continuity than D/D positioning supporting continuous RNAV operations where gaps in DME facility availability exist or when GPS is lost (for any reason). Aircraft with advanced multi-sensor RNP capability often include a higher level of D/D/I capability through use of multiple DME facilities, integration with multiple inertial navigation systems and complex filtering (e.g., Kalman filtering). These aircraft can support continuous RNAV and RNP operations when GPS is lost (for any reason).

F

Fault Detection and Exclusion (FDE). A software algorithm a GNSS sensor requires that automatically detects and excludes a faulty satellite from the GNSS position solution when a sufficient number of satellites are available.

Fixed Radius Transition (FRT). An arc at a constant (specified) radius that is tangent to both the inbound and outbound en route path segments at an en route fix. FRT apply during en route operations on published RNP routes and serve to provide aircraft a means to connect from one route to a new route at a transition fix via a published FRT. Like RF turns, FRTs may offer reliable, repeatable paths for all aircraft.



Flight Management System (FMS). An integrated system, consisting of airborne sensor, receiver and computer with both navigation and aircraft performance databases, which provides performance and area navigation guidance to a display and automatic flight control system (AFCS).

Flight Technical Error (FTE) or Path Steering Error (PSE). Accuracy with which an aircraft is controlled, as measured by the indicated aircraft position with respect to the indicated command or desired position. It does not account for procedural blunder errors.

G

Global Navigation Satellite System (GNSS). GNSS is a generic term for a worldwide position, velocity, and time determination system, which includes one or more satellite constellations, aircraft receivers, and system integrity monitoring. GNSS includes GPS, Satellite-based Augmentation Systems (SBAS) such as the wide area augmentation system (WAAS), Ground Based Augmentation System (GBAS), Global Orbiting Navigation Satellite System (GLONASS), Galileo, and any other satellite navigation system approved for civil use. GNSS can be augmented as necessary to support the Required Navigation Performance (RNP) for the actual phase of operation.

Global Positioning System (GPS). GPS is a U.S. satellite-based radio navigation system that provides a positioning service anywhere in the world. The service provided by GPS for civil use is defined in the GPS Standard Positioning System Signal Specification. GPS is the U.S. core GNSS satellite constellation providing space-based positioning, velocity, and time. GPS is composed of space, control, and user elements.

L

Long-Range Navigation System (LRNS). An electronic navigation unit that is approved for use under instrument flight rules (IFR) as a primary means of navigation, and has at least one source of navigational input, such as inertial navigation system (INS) and/or GPS.

N

Navigation Specification (Nav Spec). A set of aircraft and aircrew requirements needed to support PBN operations within a defined airspace. There are two kinds of Nav Spec:

1. RNAV specification. A Nav Spec based on RNAV that does not include the requirement for onboard performance monitoring and alerting, designated by the prefix RNAV (e.g., RNAV 5, RNAV 1).
2. RNP specification. A Nav Spec based on RNAV that includes the requirement for onboard performance monitoring and alerting, designated by the prefix RNP (e.g., RNP 4, RNP APCH).

Navigation System Error (NSE). NSE or Position Estimation Error (PEE) is the difference between the true position and estimated position.

O

Oceanic. Oceanic airspace is defined as international airspace over oceans where separation and procedures are in accordance with the International Civil Aviation Organization (ICAO). Responsibility for the provision of ATC service in this airspace is delegated to various countries.

Offshore. Offshore airspace is defined by Title 14 of the Code of Federal Regulations (14 CFR) part 71, §§ 71.31 and 71.71. It is designated in international airspace within areas of domestic radio navigational signal or ATC radar coverage, and within which domestic ATC procedures are applied.

P

Performance-Based Navigation (PBN). RNAV-based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure (IAP), or in a designated airspace.



R

Receiver Autonomous Integrity Monitoring (RAIM). An algorithm that verifies the integrity of the position output using GPS measurements, or GPS measurements and barometric aiding.

Remote Continental. Remote continental airspace is defined as airspace above terrain where line-of-sight communications, independent surveillance and reliable ground-based NAVAIDs are not available. Controllers provide air traffic services utilizing procedural control and procedural separation.

Required Navigation Performance (RNP). RNP is a statement of the 95 percent navigation accuracy performance that meets a specified value for a particular phase of flight or flight segment and incorporates associated onboard performance monitoring and alerting features to notify the pilot when the RNP for a particular phase or segment of a flight is not being met.

RNAV. See Area Navigation (RNAV) above.

RNP/RNAV Procedure. An RNP/RNAV Procedure includes instrument departure procedures (DP), standard terminal arrivals (STAR), and instrument approaches based on PBN.

RNP Value. The RNP value designates the 95 percent LNAV performance (in NM) and the related monitoring and alerting requirements associated with an RNP instrument flight operation or a particular segment of that instrument flight.

RNP System. An RNAV system which supports onboard performance monitoring and alerting.

W

Waypoints. A waypoint is a predetermined geographical position that is defined in terms of latitude/longitude coordinates. Waypoints may be a simple named point in space or associated with existing NAVAIDs, intersections, or fixes. A waypoint is most often used to indicate a change in direction, speed, or altitude along the desired path. RNAV procedures make use of both flyover and flyby waypoints.



B.2 Acronyms

Acronym	Meaning
14 CFR	Title 14 of the Code of Federal Regulations
91K	Part 91 Subpart K (14 CFR)
AC	Advisory Circular
AEG	Aircraft Evaluation Group
AFCS	Automatic Flight Control System
AFM	Airplane Flight Manual
AFMS	Airplane Flight Manual Supplement
AGL	Above Ground Level
AIP	Aeronautical Information Publication
AIR	Aircraft Certification Service
AMC	Acceptable Means of Compliance
ANP	Actual Navigation Performance
A RNP	Advanced Required Navigation Performance
ATC	Air Traffic Control
CEP	Central East Pacific
CHDO	Certificate Holding District Office
CMO	Certificate Management Office
CPDLC	Controller Pilot Data Link Communications
CTA/FIR	Control Area/Flight Information Region
DME	Distance Measuring Equipment
DP	Departure Procedure
DTK	Desired Track
FAA	Federal Aviation Administration
FDE	Fault Detection and Exclusion
FGS	Flight Guidance System
FIR	Flight Information Region
FMC	Flight Management Computer
FMS	Flight Management System
FRT	Fixed Radius Transition
FS	Flight Standards Service
FSDO	Flight Standards District Office
GNSS	Global Navigation Satellite System
GOM	General Operations Manual
GPS	Global Positioning System
HLA	High Level Airspace
ICAO	International Civil Aviation Organization
INS	Inertial Navigation System
IOM	International Operations Manual



Acronym	Meaning
IRS	Inertial Reference System
IRU	Inertial Reference Unit
LNAV	Lateral Navigation
LOA	Letter of Authorization
LRNS	Long Range Navigation System
MEL	Minimum Equipment List
MMS	Make, Model, Series
MSpec	Management Specification
Nav Spec	Navigation Specification
NM	Nautical Mile
NOPAC	North Pacific
NOTAM	Notice to Air Missions
NSE	Navigation System Error
OEM	Original Equipment Manufacturer
OpSpec	Operation Specification
PBN	Performance Based Navigation
PF	Pilot Flying
PI	Principal Inspector
POH	Pilot's Operating Handbook
POI	Principal Operations Inspector
RAIM	Receiver Autonomous Integrity Monitoring
RNAV	Area Navigation
RNP	Required Navigation Performance
SAO	Special Areas of Operation
SB	Service Bulletin
SBAS	Satellite Based Augmentation System
SIS	Signal in Space
SLOP	Strategic Lateral Offset Procedure
SOC	Statement of Compliance
STC	Supplemental Type Certificate
TC	Type Certificate
TOAC	Time of Arrival Control
TSE	Total System Error
TSO	Technical Standard Order
WGS	World Geodetic System

Please Provide Feedback

In our continuing effort to improve the quality of service we provide to you, the Federal Aviation Administration would appreciate any feedback you may have on this guide and how we can improve it:



Please Indicate “B036/B054 Application Guide” in the Subject Line

Mail to: 9-AWA-AVS-AFS-400-flight-technologies-procedures-division@faa.gov

[Flight Technologies & Procedures Division](#)