

# **PROCEDURES**

SPECIAL OPERATIONS

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**A318/A319/A320/A321**  
FLIGHT CREW  
OPERATING MANUAL

**PROCEDURES**  
**SPECIAL OPERATIONS**

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**GENERAL**

Ident.: PRO-SPO-51-A-00015857.0001001 / 09 SEP 14

**GENERAL**

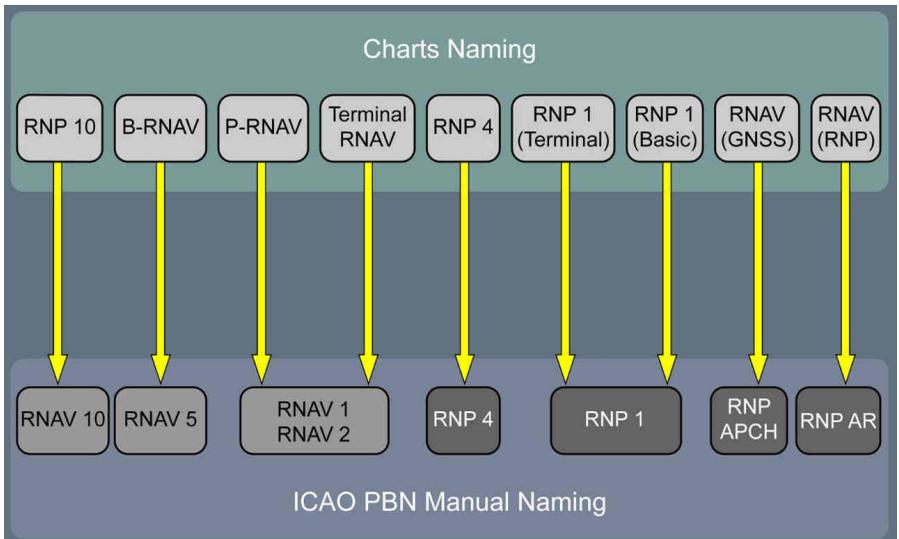
The Performance Based Navigation (PBN) concept implies that the aircraft follows the defined track with a requested navigation performance. The PBN includes RNAV and RNP operations. Contrary to RNAV operations, RNP operations require that the aircraft system monitors the navigation performance and alerts the flight crew if the requested navigation performance is no longer achieved.

For RNAV and RNP operations, an operational approval from the airline's national authorities may be required.

The AFM provides regulatory compliances associated with PBN operations.

Ident.: PRO-SPO-51-A-00015858.0001001 / 09 SEP 14

**PBN NAMING VS. CHARTS NAMING**



Ident.: PRO-SPO-51-A-00015859.0001001 / 09 SEP 14

**RNAV/RNP CAPABILITY**

Before the aircraft enters an RNAV/RNP airspace, RNAV/RNP capability is based on:

- The required RNAV/RNP equipment that is described in each RNAV/RNP section of the FCOM
- Navigation Accuracy HIGH displayed on the MCDU PROG page
- Any specific local requirements published in the Aeronautical Information Publication (AIP).

When the aircraft flies in RNAV/RNP airspace, RNAV/RNP capability is based on:

- Navigation Accuracy HIGH displayed on the MCDU PROG page
- Any specific local requirements published in the Aeronautical Information Publication (AIP).

**RNAV 10 / RNP 10**

Ident.: PRO-SPO-51-B-00015854.0001001 / 09 SEP 14

**GENERAL**

RNAV 10 operations correspond to RNP 10 operations.

In RNAV 10 airspace, the aircraft is expected to fly for a long period of time outside radio navaid coverage.

Ident.: PRO-SPO-51-B-00015855.0001001 / 09 SEP 14

**REQUIRED RNAV 10 EQUIPMENT**

The minimum navigation equipment required to enter RNAV 10 airspace is:

- Two FMGCs (or one FMGC and one BACK UP NAV )
- Two MCDUs
- Two IRS
- Two NDs (the temporary display of ND information via the PFD/ND switch is permitted on one side)
- One GPS if the flight time outside radio navaid coverage is longer than:
  - 6.2 hr from the time of IRS ground alignment, or
  - 5.7 hr from the time of the last FM position update.

Ident.: PRO-SPO-51-B-00015863.0001001 / 09 SEP 14

**PROCEDURE****BEFORE ENTERING RNAV 10 AIRSPACE**

The FMS default en route value is 2 nm . Therefore, manual selection of a required accuracy on the MCDU is at the flight crew's discretion.

If manual entry of a required accuracy is necessary, the flight crew should enter 10 nm.

**LEAVING RNAV 10 AIRSPACE**

When the aircraft leaves RNAV 10 airspace, the flight crew should revert to the default required navigation accuracy, or enter the appropriate value on the MCDU.

**MANAGEMENT OF DEGRADED NAVIGATION**

- **If one of the following messages is displayed, the flight crew should resume navigation with the FMGC that provides the correct position:**
  - GPS PRIMARY LOST  on one ND/MCDU
  - NAV ACCUR DOWNGRAD on one ND/MCDU.
- **If the GPS PRIMARY LOST  message is displayed on both NDs/MCDUs, RNAV 10 operations can be continued:**
  - With no time restriction if radio navaids update is available
  - For 5.7 hr from the time of the last position update if radio navaids update is not available. After 5.7 hr, the navigation accuracy must be considered LOW regardless of the navigation accuracy that is displayed on the MCDU PROG page.
- **If one of the following MCDU or ECAM messages is displayed, the flight crew should crosscheck the position data using the POSITION MONITOR page, the IRS 1(2)(3) pages, and the GPS MONITOR page  in order to identify which FMGC position is correct:**
  - FMS1/FMS2 POS DIFF
  - CHECK IRS 1(2)(3)/FM POSITION 
  - CHECK A/C POSITION 
  - NAV FM/GPS POS DISAGREE 

The flight crew should resume navigation with the FMGC that provides the correct position.

- **If NAV ACCUR DOWNGRAD is displayed on both sides:**

The flight crew should inform the ATC that the RNAV 10 capability is lost.

**RNAV 5 / BRNAV**

Ident.: PRO-SPO-51-C-00015851.0001001 / 09 SEP 14

**GENERAL**

RNAV 5 operations correspond to European BRNAV operations.  
In RNAV 5 airspace, radio navaid coverage supports the RNP value of 5 nm.

Ident.: PRO-SPO-51-C-00015852.0001001 / 09 SEP 14

**REQUIRED RNAV 5 EQUIPMENT**

The minimum navigation equipment required to enter RNAV 5 airspace is:

- One FMGC
- One MCDU
- One GPS or one VOR/DME or two DMEs to update FM position
- Two NDs (the temporary display of ND information via the PFD/ND switch is permitted on one side).
- One IRS

Ident.: PRO-SPO-51-C-00015864.0001001 / 09 SEP 14

**PROCEDURE****BEFORE ENTERING RNAV 5 AIRSPACE**

The FMS default en route value is 2 nm. Therefore, manual selection of a required accuracy on the MCDU is at the flight crew's discretion.

If manual entry of a required accuracy is necessary, the flight crew should enter 5 nm.

**LEAVING RNAV 5 AIRSPACE**

When the aircraft leaves RNAV 5 airspace, the flight crew should revert to the default required accuracy, or enter the appropriate value on the MCDU.

**MANAGEMENT OF DEGRADED NAVIGATION**

- **If one of the following messages is displayed, the flight crew should resume navigation with the FMGC that provides the correct position:**
  - GPS PRIMARY LOST  on one ND/MCDU
  - NAV ACCUR DOWNGRAD on one ND/MCDU.
- **If one of the following MCDU or ECAM messages is displayed, the flight crew should check the navigation accuracy with navaid raw data via the MCDU PROG page in order to identify which FMGC position is correct:**
  - GPS PRIMARY LOST  on both NDs/MCDUs
  - FMS1/FMS2 POS DIFF
  - CHECK IRS 1(2)(3)/FM POSITION 
  - CHECK A/C POSITION 
  - NAV FM/GPS POS DISAGREE 

The flight crew should resume navigation with the FMGC that provides the correct position.



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REQUIRED NAVIGATION PERFORMANCE (RNP)

● **If NAV ACCUR DOWNGRAD is displayed on both sides:**

The flight crew should inform the ATC that the RNAV 5 capability is lost.

**RNAV 1 RNAV 2 / P-RNAV - TERMINAL RNAV**

Ident.: PRO-SPO-51-D-00015848.0001001 / 09 SEP 14

**GENERAL**

RNAV 1(2) operations correspond to P-RNAV-TERMINAL RNAV operations.  
In RNAV 1(2) airspace, radio navaid coverage supports the RNP value of 1(2) nm. However, the AIP may specify that GPS equipment is required.

Ident.: PRO-SPO-51-D-00015849.0001001 / 09 SEP 14

**REQUIRED RNAV 1(2) EQUIPMENT**

The minimum navigation equipment required to enter RNAV1/RNAV2 airspace is:

- One FMGC
- One MCDU
- One GPS or one VOR/DME or two DMEs to update the FM position
- Two IRS
- One FD in NAV mode
- Two NDs (the temporary display of ND information via the PFD/ND switch is permitted on one side).

Ident.: PRO-SPO-51-D-00015865.0001001 / 09 SEP 14

**PROCEDURE**

**BEFORE ENTERING RNAV 1(2) AIRSPACE**

The FMS navigation database provides the terminal procedure (RNAV SID, RNAV STAR, RNAV TRANSITION, etc.) of the flight plan. The flight crew must crosscheck the terminal procedure from the published charts with the FMS navigation database on the F-PLN page (waypoint sequences, tracks, distances, and altitude or speed constraints). The flight crew must not modify the procedure that is provided by the navigation database, unless required by the ATC (DIR TO, radar vectoring, insertion of waypoints from the navigation database).

The FMS default value in TERMINAL AREA is 1 nm. Therefore, manual selection of a required navigation accuracy on the MCDU is at the flight crew's discretion.

If manual entry of a required accuracy is necessary, the flight crew should enter 1 or 2 nm as applicable.

**LEAVING RNAV 1(2) AIRSPACE**

When the aircraft leaves RNAV 1(2) airspace, the flight crew should revert to the default required accuracy, or enter the appropriate value on the MCDU.

**MANAGEMENT OF DEGRADED NAVIGATION**

- **If one of the following messages is displayed, the flight crew should resume navigation with the FMGC that provides the correct position:**
  - GPS PRIMARY LOST  on one ND/MCDU
  - NAV ACCUR DOWNGRAD on one ND/MCDU.
  
- **If one of the following messages is displayed, the flight crew should check the navigation accuracy with navaid raw data via the MCDU PROG page in order to identify which FMGC position is correct:**
  - GPS PRIMARY LOST  on both NDs/MCDUs
  - FMS1/FMS2 POS DIFF
  - CHECK IRS 1(2)(3)/FM POSITION 
  - CHECK A/C POSITION 
  - NAV FM/GPS POS DISAGREE 

The flight crew should resume navigation with the FMGC that provides the correct position.

- **If NAV ACCUR DOWNGRAD is displayed on both sides:**

The flight crew should inform the ATC that the RNAV 1(2) capability is lost.

**RNP 4**

Ident.: PRO-SPO-51-E-00015845.0001001 / 09 SEP 14

**GENERAL**

In this airspace, the aircraft is expected to fly for a long period of time outside radio navaid coverage.

Ident.: PRO-SPO-51-E-00015846.0001001 / 09 SEP 14

**REQUIRED RNP 4 EQUIPMENT**

The minimum navigation equipment required to enter RNP 4 airspace is:

- Two FMGCs (or one FMGC and one BACK UP NAV  )
- Two MCDUs
- Two IRS

- One GPS
- Two NDs (the temporary display of ND information via the PFD/ND switch is permitted on one side).

Ident.: PRO-SPO-51-E-00015866.0001001 / 09 SEP 14

**PROCEDURE****BEFORE ENTERING RNP 4 AIRSPACE**

The FMS default en route value is 2 nm. Therefore, manual selection of a required navigation accuracy on the MCDU is at the flight crew's discretion.

If manual entry of a required accuracy is necessary, the flight crew should enter 4 nm.

**LEAVING RNP 4 AIRSPACE**

When the aircraft leaves RNP 4 airspace, the flight crew should revert to the default required navigation accuracy, or enter the appropriate value on the MCDU.

**MANAGEMENT OF DEGRADED NAVIGATION**

- **If one of the following messages is displayed, the flight crew should resume navigation with the FMGC that provides the correct position:**
  - GPS PRIMARY LOST on one ND/MCDU
  - NAV ACCUR DOWNGRAD on one ND/MCDU.
- **If one of the following MCDU or ECAM messages is displayed, the flight crew should crosscheck the position data using the POSITION MONITOR page, the IRS 1(2)(3) pages, and the GPS MONITOR page in order to identify which FMGC position is correct:**
  - GPS PRIMARY LOST on both NDs/MCDUs
  - FMS1/FMS2 POS DIFF
  - CHECK IRS 1(2)(3)/FM POSITION 
  - CHECK A/C POSITION 
  - NAV FM/GPS POS DISAGREE

The flight crew should resume navigation with the FMGC that provides the correct position.

- **If NAV ACCUR DOWNGRAD is displayed on both sides:**

The flight crew should inform the ATC that the RNP 4 capability is lost.

**RNP 1 / TERMINAL RNP 1- BASIC RNP 1**

Ident.: PRO-SPO-51-F-00015842.0001001 / 09 SEP 14

**GENERAL**

RNP 1 operations correspond to RNP 1 Terminal operations.

In RNP 1 airspace, GPS or DME/DME position update enable to ensure the RNP value of 1 nm.

Ident.: PRO-SPO-51-F-00015843.0001001 / 09 SEP 14

**REQUIRED RNP 1 EQUIPMENT**

The minimum navigation equipment required to enter RNP1 airspace is:

- One FMGC
- One MCDU
- One GPS or 2 DMEs to update the FM position
- Two IRS
- One FD in NAV mode
- Two NDs (the temporary display of ND information via the PFD/ND switch is permitted on one side).

Ident.: PRO-SPO-51-F-00015867.0001001 / 09 SEP 14

**PROCEDURE****FLIGHT PREPARATION**

If GPS is required by the AIP, RAIM/AIME availability should be confirmed for RNP 1 operations.

*Refer to PRO-NOR-SOP-02 GPS PRIMARY Availability*

**BEFORE ENTERING RNP 1 AIRSPACE**

The FMS navigation database provides the terminal procedure (RNAV SID, RNAV STAR, RNAV TRANSITION, etc.) of the flight plan. The flight crew must check the terminal procedure from the published charts with the FMS navigation database on the F-PLN page (waypoint sequences, tracks, distances, and altitude or speed constraints). The flight crew must not modify the procedure that is provided by the navigation database, unless required by the ATC (DIR TO, radar vectoring, insertion of waypoints from the navigation database).

The FMS default value in TERMINAL AREA is 1 nm. Therefore, manual selection of a required navigation accuracy on the MCDU is at the flight crew's discretion.

If manual entry of a required navigation accuracy is necessary, the flight crew should enter 1 nm.

**LEAVING RNP 1 AIRSPACE**

When the aircraft leaves RNP 1 airspace, the flight crew should revert to the default required navigation accuracy, or enter the appropriate value on the MCDU.

**MANAGEMENT OF DEGRADED NAVIGATION**

- **If one of the following messages is displayed, the flight crew should resume navigation with the FMGC that provides the correct position:**
  - GPS PRIMARY LOST  on one ND/MCDU
  - NAV ACCUR DOWNGRAD on one ND/MCDU.
  
- **If one of the following MCDU or ECAM messages is displayed, the flight crew should check the navigation accuracy with navaid raw data via the MCDU PROG page in order to identify which FMGC position is correct:**
  - GPS PRIMARY LOST  on both NDs/MCDUs
  - FMS1/FMS2 POS DIFF
  - CHECK IRS 1(2)(3)/FM POSITION 
  - CHECK A/C POSITION 
  - NAV FM/GPS POS DISAGREE 

The flight crew should resume navigation with the FMGC that provides the correct position.

- **If NAV ACCUR DOWNGRAD is displayed on both sides:**

The flight crew should inform the ATC that the RNP 1 capability is lost.

**RNP APCH / RNAV(GNSS)**

Ident.: PRO-SPO-51-G-00015839.0001001 / 09 SEP 14

**GENERAL**

RNP APCH operations correspond to RNAV(GNSS) or RNAV(GPS) operations.  
For these operations, the GPS is required to support the RNP value of 0.3 nm.

Ident.: PRO-SPO-51-G-00015840.0001001 / 09 SEP 14

**REQUIRED RNP APCH EQUIPMENT**

The minimum equipment required to perform RNP APCH operations is:

- One FMS
- One GPS
- One MCDU
- One FD
- One PFD

- One ND on the PF side
- Two FCU channels

Ident.: PRO-SPO-51-G-00015868.0001001 / 09 SEP 14

**PROCEDURE**

*Refer to PRO-NOR-SOP-18-C Approach using FINAL APP Guidance - General*  
*Refer to PRO-NOR-SOP-18-C Approach using FPA Guidance - General*

**RNP AR / RNAV(RNP)**

Ident.: PRO-SPO-51-H-00012736.0002001 / 09 SEP 14

**GENERAL**

RNP AR operations correspond to RNAV(RNP) operations.

For RNP AR operations, the flight crew should refer to the specific procedures published by the airline.

The airline must obtain an operational approval and the flight crew must be qualified for this type of operations. To obtain this operational approval the airline should refer to the AFM and the associated Airworthiness Compliance Document (ACD). The approved RNP values are given in the AFM and the ACD.

The main procedure steps for RNP AR have been introduced in the Procedures of this FCOM and in the paragraph below. This does not relieve the airline from the need to provide the flight crew with tailored procedures when required.

Ident.: PRO-SPO-51-H-00012737.0002001 / 09 SEP 14

**REQUIRED RNP AR EQUIPMENT**

The minimum equipment required to perform RNP AR operations is:

- 2 FMGC
- 2 MCDU
- 2 FD
- 1 AP, at least
- 2 FAC
- 2 ELAC
- 2 SFCC
- 2 RA
- 2 PFD with V/DEV displays
- 2 ND
- 2 GPS (MMR)
- 3 ADIRS in NAV mode

- TAWS with display of terrain
- FCU with both channels

Ident.: PRO-SPO-51-H-00012737.0003001 / 09 SEP 14

**REQUIRED RNP AR EQUIPMENT**

The minimum equipment required to perform RNP AR operations is:

- 2 FMGC
- 2 MCDU
- 2 FD
- 2 AP
- 2 FAC
- 2 ELAC
- 2 SFCC
- 2 RA
- 2 PFD with L/DEV and V/DEV displays
- 2 ND
- 2 GPS (MMR)
- 3 ADIRS in NAV mode
- TAWS with display of terrain
- FCU with both channels

Ident.: PRO-SPO-51-H-00014680.0004001 / 29 MAY 13

**PROCEDURES**

The availability of GPS PRIMARY for the estimated time of operation must be verified with an appropriate GPS prediction tool prior to dispatch.

Prior starting an RNP AR instrument procedures, check that:

- OAT and wind, as applicable, are within limits
- All the NAVAIDS are deselected to avoid VOR/DME radio update if GPS PRIMARY is lost
- The FMS lateral and vertical F-PLN extracted from the navigation database is in agreement with the instrument procedure chart
- Two GPS sensors are in NAV on GPS MONITOR page
- The correct RNP value is displayed on MCDU with HIGH accuracy
- GPS PRIMARY is available
- Select the RNP pb-sw to ON, to get L/DEV indication on PFD.

For operations with RNP < 0.3 nm, one AP must be engaged.

If obstacles, EGPWS TERRAIN display must be selected on both ND unless weather radar monitoring is required on one side.

Airspeed and configuration must be adapted for the radius of turns in the procedure.

**DEPARTURE**

Before takeoff check that NAV is armed.

When NAV is indicated active on FMA and at 100 ft select AP ON.

Monitor lateral deviation using the L/DEV on PFD.

Callout must be performed when L/DEV ½ RNP or 1 dot is reached (whichever is lower).

If L/DEV increases towards 1 RNP or 2 dots (whichever is lower), take over manually using FD and the L/DEV indication to fly back on the intended flight plan and reengage AP as applicable.

**APPROACH**

*Refer to FCOM-PRO-NOR-SOP-APPROACH-AIRCRAFT GUIDANCE MANAGEMENT-APPR using FINAL APP for RNAV(RNP)*

**GO AROUND**

*Refer to FCOM-PRO-NOR-SOP-GO AROUND*

**ABNORMAL OPERATIONS**

Detailed information is given in the ACD for the airline to develop contingency procedures adapted to each operation.

The flight crew must be trained to conduct departure or missed approach procedures with systems failures to ensure a safe extraction.

**ENGINE FAILURE**

In case of engine failure during departure or a missed approach procedure, the flight crew must take into consideration the bank angle limitation when flying at a speed lower than the maneuvering speed. Turns in the procedure may require bank angle higher than 15 °. Flying with one engine inoperative affects the aircraft lateral performance. The crew should be trained and instructed to disconnect AP should the aircraft deviate from the intended track. This training must consider turning and straight legs as appropriate.

Ident.: PRO-SPO-51-H-00014680.0002001 / 29 MAY 13

**PROCEDURES**

The availability of GPS PRIMARY for the estimated time of operation must be verified with an appropriate GPS prediction tool prior to dispatch.

Prior starting an RNP AR instrument procedures, check that:

- OAT and wind, as applicable, are within limits
- All the NAVAIDS are deselected to avoid VOR/DME radio update if GPS PRIMARY is lost
- The FMS lateral and vertical F-PLN extracted from the navigation database is in agreement with the instrument procedure chart
- Two GPS sensors are in NAV on GPS MONITOR page

- The correct RNP value is displayed on MCDU with HIGH accuracy
- GPS PRIMARY is available.

For operations with RNP < 0.3 nm, one AP must be engaged.

If obstacles, EGPWS TERRAIN display must be selected on both ND unless weather radar monitoring is required on one side.

Airspeed and configuration must be adapted for the radius of turns in the procedure.

## DEPARTURE

Before takeoff check that NAV is armed.

When NAV is indicated active on FMA and at 100 ft select AP ON.

Monitor lateral deviation using the L/DEV on PFD.

Callout must be performed when L/DEV ½ RNP or 1 dot is reached (whichever is lower).

If L/DEV increases towards 1 RNP or 2 dots (whichever is lower), take over manually using FD and the L/DEV indication to fly back on the intended flight plan and reengage AP as applicable.

## APPROACH

*Refer to FCOM-PRO-NOR-SOP-APPROACH-AIRCRAFT GUIDANCE MANAGEMENT-APPR using FINAL APP for RNAV(RNP)*

## GO AROUND

*Refer to FCOM-PRO-NOR-SOP-GO AROUND*

## ABNORMAL OPERATIONS

Detailed information is given in the ACD for the airline to develop contingency procedures adapted to each operation.

The flight crew must be trained to conduct departure or missed approach procedures with systems failures to ensure a safe extraction.

## ENGINE FAILURE

In case of engine failure during departure or a missed approach procedure, the flight crew must take into consideration the bank angle limitation when flying at a speed lower than the maneuvering speed. Turns in the procedure may require bank angle higher than 15 °. Flying with one engine inoperative affects the aircraft lateral performance. The crew should be trained and instructed to disconnect AP should the aircraft deviate from the intended track. This training must consider turning and straight legs as appropriate.

Ident.: PRO-SPO-51-H-00014680.0003001 / 29 MAY 13

## PROCEDURES

The availability of GPS PRIMARY for the estimated time of operation must be verified with an appropriate GPS prediction tool prior to dispatch.

Prior starting an RNP AR instrument procedures, check that:

- OAT and wind, as applicable, are within limits
- All the NAVAIDS are deselected to avoid VOR/DME radio update if GPS PRIMARY is lost
- The FMS lateral and vertical F-PLN extracted from the navigation database is in agreement with the instrument procedure chart
- Two GPS sensors are in NAV on GPS MONITOR page
- The correct RNP value is displayed on MCDU with HIGH accuracy
- GPS PRIMARY is available.

If obstacles, EGPWS TERRAIN display must be selected on both ND unless weather radar monitoring is required on one side.

Airspeed and configuration must be adapted for the radius of turns in the procedure.

## DEPARTURE

Before takeoff check that NAV is armed.

When NAV is indicated active on FMA and at 100 ft select AP ON.

Monitor lateral deviation using the XTK on ND.

Callout must be performed when XTK is at or above 0.1 nm.

If XTK increases towards 1 RNP, take over manually using FD indication to fly back on the intended flight plan and using ND and XTK to reengage AP as applicable.

## APPROACH

*Refer to FCOM-PRO-NOR-SOP-APPROACH-AIRCRAFT GUIDANCE MANAGEMENT-APPR using FINAL APP for RNAV(RNP)*

## GO AROUND

*Refer to FCOM-PRO-NOR-SOP-GO AROUND*

## ABNORMAL OPERATIONS

Detailed information is given in the ACD for the airline to develop contingency procedures adapted to each operation.

The flight crew must be trained to conduct departure or missed approach procedures with systems failures to ensure a safe extraction.

## ENGINE FAILURE

In case of engine failure during departure or a missed approach procedure, the flight crew must take into consideration the bank angle limitation when flying at a speed lower than the maneuvering speed. Turns in the procedure may require bank angle higher than 15°. Flying with one engine inoperative affects the aircraft lateral performance. The crew should be trained

and instructed to disconnect AP should the aircraft deviate from the intended track. This training must consider turning and straight legs as appropriate.

Ident.: PRO-SPO-51-H-00014680.0006001 / 29 MAY 13

## **PROCEDURES**

The availability of GPS PRIMARY for the estimated time of operation must be verified with an appropriate GPS prediction tool prior to dispatch.

Prior starting an RNP AR instrument procedures, check that:

- OAT and wind, as applicable, are within limits
- All the NAVAIDS are deselected to avoid VOR/DME radio update if GPS PRIMARY is lost
- The FMS lateral and vertical F-PLN extracted from the navigation database is in agreement with the instrument procedure chart
- Two GPS sensors are in NAV on GPS MONITOR page
- The correct RNP value is displayed on MCDU with HIGH accuracy
- GPS PRIMARY is available.

If obstacles, EGPWS TERRAIN display must be selected on both ND unless weather radar monitoring is required on one side.

Airspeed and configuration must be adapted for the radius of turns in the procedure.

## **DEPARTURE**

Before takeoff check that NAV is armed.

When NAV is indicated active on FMA and at 100 ft select AP ON.

Monitor lateral deviation using the L/DEV on PFD.

Callout must be performed when L/DEV ½ RNP or 1 dot is reached (whichever is lower).

If L/DEV increases towards 1 RNP or 2 dots (whichever is lower), take over manually using FD and the L/DEV indication to fly back on the intended flight plan and reengage AP as applicable.

## **APPROACH**

*Refer to FCOM-PRO-NOR-SOP-APPROACH-AIRCRAFT GUIDANCE MANAGEMENT-APPR using FINAL APP for RNAV(RNP)*

## **GO AROUND**

*Refer to FCOM-PRO-NOR-SOP-GO AROUND*

## **ABNORMAL OPERATIONS**

Detailed information is given in the ACD for the airline to develop contingency procedures adapted to each operation.

The flight crew must be trained to conduct departure or missed approach procedures with systems failures to ensure a safe extraction.

**ENGINE FAILURE**

In case of engine failure during departure or a missed approach procedure, the flight crew must take into consideration the bank angle limitation when flying at a speed lower than the maneuvering speed. Turns in the procedure may require bank angle higher than 15 °. Flying with one engine inoperative affects the aircraft lateral performance. The crew should be trained and instructed to disconnect AP should the aircraft deviate from the intended track. This training must consider turning and straight legs as appropriate.