Subject matter and scope

The implementation objective is aligned to Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018 laying down requirements for PBN. The objective describes the implementation of:

a) ATS routes for rotorcraft operations below FL150,
b) ATS routes for rotorcraft operations above FL150,
c) SID and STAR for rotorcraft to instrument RWYs

PBN Regulation (EU) 2018/1048 of 18 July 2018, **does not impose obligatory establishment of** ATS routes, SID or STAR for rotorcraft operations. However, the regulation does **prescribe obligatory set of specifications** to be complied with, **where a stakeholder had decided to establish** ATS routes, SID or STAR for rotorcraft operations.

Where ANSPs have established ATS routes, SID or STAR for rotorcraft operations, they shall implement those routes in accordance with the requirements of the RNP 0.3, or RNP 1, or RNAV 1 specifications. In that case, they shall be entitled to decide which of those three requirements (specifications) they comply with.

This Objective supports implementation of SESAR Solution #113 “Low-level IFR routes (LLR) for rotorcraft” which improves connectivity between the airports included into the TMA airspace and also introduces the use of “Standard PinS - Point In Space” procedures concept. The PinS procedures consist in flying under instrument flight rules (IFR) to/from a Point-In-Space in the proximity of the landing/departure site using very high accuracy (RNP0.3 or better). The segment joining the ‘PinS’ and the landing/departure site (FATO - Final Approach & Take-Off areas) is flown visually.

The point-in-space procedures allow an easier way to manage both traffic flows - fixed-wing aircraft and rotorcraft - at medium and large airports, simultaneously and in a non-interfering way (SNI operations).

If this objective is implemented where NAV03.2 is also applied, it should be part of the airspace concept developed in SLoA NAV03.2 - ASP01.

**NOTE 1:** System improvements for controller support tools which may be required are covered by other Implementation Objectives like ATC12.1 (MTCD, conflict resolution support info and MONA), ATC02.9 (STCA) and ATC02.8 (APW).

**NOTE FOR MILITARY AUTHORITIES:** It is the responsibility of each military authority to review this implementation Objective IN ITS ENTIRETY and address each of the SLoAs that the military authority considers RELEVANT for itself. This has to be done on top and above of the review of “MIL” SLoAs which identify actions EXCLUSIVE to military authorities.

### Applicability Area(s) & Timescale(s)

<table>
<thead>
<tr>
<th>Applicability Area 1</th>
<th>Applicability Area 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU member states</td>
<td>Other ECAC States, except those already listed in Applicability Area 1.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Timescales:</th>
<th>From:</th>
<th>By:</th>
<th>Applicable to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes above FL150, where established.</td>
<td>07/08/2018</td>
<td>03/12/2020</td>
<td>Applicability area 1</td>
</tr>
<tr>
<td>Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes below FL150, where established.</td>
<td>07/08/2018</td>
<td>25/01/2024</td>
<td>Applicability area 1</td>
</tr>
<tr>
<td>One rotorcraft RNP0.3, RNP01 or RNAV1 SID and STAR per instrument RWY, where established.</td>
<td>07/08/2018</td>
<td>25/01/2024</td>
<td>Applicability area 1</td>
</tr>
<tr>
<td>All rotorcraft RNP0.3, RNP01 or RNAV1 SIDs and STARs per instrument RWY, where established.</td>
<td>07/08/2018</td>
<td>06/06/2030</td>
<td>Applicability area 1</td>
</tr>
<tr>
<td>IFR ATS route above/below FL150, SID and STAR for Rotorcraft Operations</td>
<td>07/08/2018</td>
<td>06/06/2030</td>
<td>Applicability Area 2</td>
</tr>
</tbody>
</table>

### References

European ATM Master Plan
**Optimised Low-Level IFR Routes in TMA for Rotorcraft**

**NavStep:** Integration into the TMA route structure of optimised Low Level IFR route network for rotorcraft using RNP-1/RNP-0.3

**Enablers:** A/C-04b

**Legend:**
- **WXYZ-001**: Covered by SLoA(s) in this objective
- **WXYZ-002**: Covered by SLoA(s) in another objective
- **WXYZ-003**: Objective covering the enabler
- **zzz**: Not covered in the Implementation Plan

**Applicable Legislation**

Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018 laying down airspace usage requirements and operating procedures concerning performance-based navigation

**ICAO GANP – ASBUs**

B1-APTA Optimised Airport Accessibility

**SESAR Solution**

#113 Optimised Low-level IFR routes (LLR) for rotorcraft

**Operating Environment**

Terminal, En-route

### Stakeholder Lines of Action (SLoAs)

<table>
<thead>
<tr>
<th>SLoA ref.</th>
<th>Title</th>
<th>From</th>
<th>By</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAV12-REG01</td>
<td>Verify the transition plan for PBN in ANS provision</td>
<td>03/12/2020</td>
<td>06/06/2030</td>
</tr>
<tr>
<td>NAV12-ASP01</td>
<td>Implement low-level IFR routes (LLR) for rotorcraft operations</td>
<td>07/08/2018</td>
<td>25/01/2024</td>
</tr>
<tr>
<td>NAV12-ASP02</td>
<td>Implement Rotorcraft ATS routes above FL150</td>
<td>07/08/2018</td>
<td>03/12/2020</td>
</tr>
<tr>
<td>NAV12-ASP03</td>
<td>Implement Rotorcraft ATS routes below FL150</td>
<td>07/08/2018</td>
<td>25/01/2024</td>
</tr>
<tr>
<td>NAV12-ASP04</td>
<td>Implement one rotorcraft RNP0.3, RNP01 or RNAV1 SID and STAR per instrument RWY</td>
<td>07/08/2018</td>
<td>25/01/2024</td>
</tr>
<tr>
<td>NAV12-ASP05</td>
<td>Implement all rotorcraft RNP0.3, RNP01 or RNAV1 SID and STAR per instrument RWY</td>
<td>07/08/2018</td>
<td>06/06/2030</td>
</tr>
<tr>
<td>NAV12-ASP06</td>
<td>Train air traffic controllers procedures supporting low-level IFR routes (LLR) and other routes for rotorcraft operations</td>
<td>07/08/2018</td>
<td>06/06/2030</td>
</tr>
<tr>
<td>NAV12-ASP07</td>
<td>Develop a local safety assessment for the implementation of low-level IFR routes (LLR) and other routes for rotorcraft operations</td>
<td>07/08/2018</td>
<td>06/06/2030</td>
</tr>
<tr>
<td>NAV12-ASP08</td>
<td>Establish the transition plan for PBN in ANS provision</td>
<td>03/12/2020</td>
<td>06/06/2030</td>
</tr>
<tr>
<td>NAV12-USE01</td>
<td>Install appropriate RNP and/or RNAV equipment</td>
<td>07/08/2018</td>
<td>06/06/2030</td>
</tr>
<tr>
<td>NAV12-USE02</td>
<td>Train flight crews in RNP and/or RNAV ATS routes</td>
<td>07/08/2018</td>
<td>06/06/2030</td>
</tr>
</tbody>
</table>

Description of finalised and deleted SLoAs is available on the eATM Portal @ https://www.eatmportal.eu/working/depl/essip_objectives

### Expected Performance Benefits

**Safety:**

Improved through airspace de-confliction of low altitude airways. It can provide more visibility into planning of those sectors (up-stream sectors) where the ATCO is arranging the arrivals sequence.

**Capacity:**

The point-in-space procedures have the potential to enable an increasing of passenger throughput at medium and large airports, removing IFR rotorcraft from active runways (no low performance/low speed movements into the approach sequence to runway).

**Operational Efficiency:**

- Reduced track mileage, resulting in less fuel consumption and associated CO2 emissions;
- Enhanced transition from the en-route phase (flying the Low Level IFR routes) to the approach phase (e.g Point In Space IFR rotorcraft procedures) to the final approach and take-off area (FATO) and vice versa;
- More direct routing in dense terminal airspace (obstacle-rich or noise-sensitive terminal environment).

**Cost Efficiency:**

- Reduced track mileage, resulting in less fuel consumption and associated CO2 emissions.

**Security:**

-
### Detailed SLoA Descriptions

<table>
<thead>
<tr>
<th>NAV12-REG01</th>
<th>Verify the transition plan for PBN in ANS provision</th>
<th>From: 03/12/2020</th>
<th>By: 06/06/2030</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action by:</strong></td>
<td>National Supervisory Authorities (NSAs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Description &amp; purpose:</strong></td>
<td>This SLoA is mandatory only for the States subject to Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018. Verify whether the draft transition plan, or the draft significant update thereof, complies with the requirements of PBN Implementing Regulation and in particular whether it takes account of the views of airspace users where appropriate, including those operating State aircraft. Inform the providers of ATM/ANS of the outcome of that verification without undue delay.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Finalisation criteria:</strong></td>
<td>1 - The outcome of the verification has been notified to ANSP.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NAV12-ASP01</th>
<th>Implement low-level IFR routes (LLR) for rotorcraft operations</th>
<th>From: 07/08/2018</th>
<th>By: 25/01/2024</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action by:</strong></td>
<td>ANS Providers</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Description &amp; purpose:</strong></td>
<td>This SLoA is focused at implementation of SESAR Solution #113 “Low-level IFR routes (LLR) for rotorcraft”. Implement IFR LLR for rotorcraft between the airports included into the TMA airspace, and also implement ”Standard PinS - Point In Space” procedures concept. The LLR departure and arrival procedures should comply with normal climb and descent profiles for the operation considered and identify minimum segment altitude requirements. Where NAV03.2 is implemented, these routes should be part of the airspace concept developed in SLoA NAV03.2 - ASP01. Note1: The deadline of 25/01/2024 does not apply to other ECAC (non-EU member) states, in LSSIP context they should not be labelled as being “Late” against this deadline. Note2: In the context of LSSIP reporting, this SLoA may be reported, as “Not Applicable” where there is no any business need or intention to implement it.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Finalisation criteria:</strong></td>
<td>1 - RNP1.0 or RNP0.3 or RNAV 1 low level IFR routes in TMA have been published in AIP and implemented. Note: In LSSIP reporting, the implemented PBN Specification should be listed/stated in the LSSIP comment field of this SLoA.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NAV12-ASP02</th>
<th>Implement Rotorcraft ATS routes above FL150</th>
<th>From: 07/08/2018</th>
<th>By: 03/12/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action by:</strong></td>
<td>ANS Providers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Implementation Plan Edition 2019
### NAV12 | Optimised Low-Level IFR Routes in TMA for Rotorcraft

#### Description & purpose:
Where providers of ATM/ANS have established ATS routes above FL150, for rotorcraft operations, they shall implement those routes in accordance with the requirements of the RNP 0.3, RNP 1 or RNAV 1 specifications. The providers are entitled to decide which of those three sets of requirements (specifications) they will comply with.

**Note1:** The deadline of 03/12/2020 does not apply to other ECAC (non-EU member) states, in LSSIP context they should not be labelled as being “Late” against this deadline.

**Note2:** In the context of LSSIP reporting, this SLoA may be reported, as “Not Applicable” where there is no any business need or intention to implement it.

#### Supporting material(s):
  

  

  
  **Url:** [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)

  
  **Url:** [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)

  
  **Url:** [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)

- SESAR Solution #113 Data pack:
  

#### Finalisation criteria:
1 - RNP 0.3, RNP 1 or RNAV 1 ATS routes for rotorcraft above FL150 have been published in AIP and implemented.

**Note:** In LSSIP reporting, the implemented PBN Specification should be listed/stated in the LSSIP comment field of this SLoA.

#### NAV12-ASP03

<table>
<thead>
<tr>
<th>Implement Rotorcraft ATS routes below FL150</th>
<th>From:</th>
<th>By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/08/2018</td>
<td>25/01/2024</td>
<td></td>
</tr>
</tbody>
</table>

**Action by:** ANS Providers

**Description & purpose:** Where providers of ATM/ANS have established ATS routes below FL150, for rotorcraft operations, they shall implement those routes in accordance with the requirements of the RNP 0.3, RNP 1 or RNAV 1 specifications. The providers are entitled to decide which of those three sets of requirements (specifications) they will comply with.

**Note1:** The deadline of 25/01/2024 does not apply to other ECAC (non-EU member) states, in LSSIP context they should not be labelled as being “Late” against this deadline.

**Note2:** In the context of LSSIP reporting, this SLoA may be reported, as “Not Applicable” where there is no any business need or intention to implement it.

#### Supporting material(s):
  

  

  
  **Url:** [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)

  
  **Url:** [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)

  
  **Url:** [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)

- SESAR Solution #113 Data pack:
  

#### Finalisation criteria:
1 - RNP 0.3, RNP 1 or RNAV 1 ATS routes for rotorcraft below FL150 have been published in AIP and implemented.

**Note:** In LSSIP reporting, the implemented PBN Specification should be listed/stated in the LSSIP comment field of this SLoA.

#### NAV12-ASP04

<table>
<thead>
<tr>
<th>Implement one rotorcraft RNP0.3, RNP01 or RNAV1 SID and STAR per instrument RWY</th>
<th>From:</th>
<th>By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/08/2018</td>
<td>25/01/2024</td>
<td></td>
</tr>
</tbody>
</table>

**Action by:** ANS Providers

**Description & purpose:** Where SID or STAR are established for rotorcraft operations, at least one RNP03, RNP1 or RNAV 1 SID or STAR shall be implemented at all instrument runway ends by 25 January 2024.

**Note1:** The deadline of 25/01/2024 does not apply to other ECAC (non-EU member) states, in LSSIP context they should not be labelled as being “Late” against this deadline.

**Note2:** In the context of LSSIP reporting, this SLoA may be reported, as “Not Applicable” where there is no any business need or intention to implement it.
## Optimised Low-Level IFR Routes in TMA for Rotorcraft

### Supporting material(s):
  - [Url](http://www.eurocontrol.int/sites/default/files/publication/files/handbook-pbn-implement-2013-ed-3a.pdf)
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)

### Finalisation criteria:
1. At least one SID and STAR have been implemented per instrument RWY.
   - Note: In LSSIP reporting, the implemented PBN Specification should be listed/stated in the LSSIP comment field of this SLoA.

<table>
<thead>
<tr>
<th>NAV12-ASP05</th>
<th>Implement all rotorcraft RNP0.3, RNP01 or RNAV1 SID and STAR per instrument RWY</th>
<th>From: 07/08/2018</th>
<th>By: 06/06/2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action by:</td>
<td><strong>ANS Providers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description &amp; purpose:</td>
<td>Where SID or STAR are established for rotorcraft operations, all RNP03, RNP1 or RNAV 1 SID or STAR shall be implemented at all instrument runway ends by 06 June 2030. Note1: The deadline of 06/06/2030 does not apply to other ECAC (non-EU member) states, in LSSIP context they should not be labelled as being “Late” against this deadline. Note2: In the context of LSSIP reporting, this SLoA may be reported, as “Not Applicable” where there is no any business need or intention to implement it.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
  - [Url](http://www.eurocontrol.int/sites/default/files/publication/files/handbook-pbn-implement-2013-ed-3a.pdf)
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)

### Finalisation criteria:
1. All SID and STAR have been implemented at all instrument RWYs.
   - Note: In LSSIP reporting, the implemented PBN Specification should be listed/stated in the LSSIP comment field of this SLoA.

<table>
<thead>
<tr>
<th>NAV12-ASP02</th>
<th>Train air traffic controllers procedures supporting low-level IFR routes (LLR) in TMA and other routes for rotorcraft operations</th>
<th>From: 07/08/2018</th>
<th>By: 06/06/2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action by:</td>
<td><strong>ANS Providers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description &amp; purpose:</td>
<td>Air traffic controllers who provide ATC services where RNP 1,0/0.3 or RNAV 1 is implemented should have completed training specific to the RNP 1,0/0.3 or RNAV 1 navigation specification.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)
  - [Url](http://www.icao.int/publications/Pages/catalogue.aspx)

### Finalisation criteria:
1. The necessary training has been given to controllers responsible for the operation of RNP 1,0/0.3 or RNAV 1.

<table>
<thead>
<tr>
<th>NAV12-ASP03</th>
<th>Develop a local safety assessment for the implementation of low-level IFR routes (LLR) in TMA and other ATS routes for rotorcraft operations</th>
<th>From: 07/08/2018</th>
<th>By: 06/06/2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action by:</td>
<td><strong>ANS Providers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description &amp; purpose:</td>
<td>Develop a safety study for the intended operations (which will depend on the route configuration, air traffic density and intervention capability, etc.). Horizontal separation standards are published in PANS-ATM (Doc 4444). Guidance on obstacle clearance is provided in PANS-OPS (Doc 8168, Volume II).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Implementation Plan Edition 2019**
### Supporting material(s):
  - U: [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)
  - U: [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)
  - U: [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)

### Finalisation criteria:
1 - Local safety assessment has been finalised and delivered to the National Supervisory Authority as necessary.

### NAV12-ASP04

**Establish the transition plan for PBN in ANS provision**

<table>
<thead>
<tr>
<th>From:</th>
<th>By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/12/2020</td>
<td>06/06/2030</td>
</tr>
</tbody>
</table>

**Action by:** ANS Providers

**Description & purpose:**
This SLoA is mandatory only for the States subject to Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018. Establish and implement a transition plan for using PBN. The transition plan shall be kept up-to-date. The transition plan shall be consistent with the European ATM Master Plan and the common projects referred to in Article 15a of Regulation (EC) No 550/2004 of the European Parliament and of the Council. Consult all of the following parties on the draft transition plan and the draft of any significant updates thereof and take account of their views where appropriate:
(a) aerodrome operators, airspace users and representative organisations of such airspace users affected by the provision of ANS services;
(b) the Network Manager;
(c) ANS providers in adjacent airspace blocks.
Submit the results of the consultation, as well as the draft transition plan, or the draft significant update thereof, for approval to the competent authority.

**Supporting material(s):**
  - U: [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)
  - U: [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)
  - U: [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)

### Finalisation criteria:
1 - The draft transition plan, or the draft significant update thereof, has been submitted to the competent authority for approval.

### NAV12-USE01

**Install appropriate RNP and/or RNAV equipment**

<table>
<thead>
<tr>
<th>From:</th>
<th>By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/08/2018</td>
<td>06/06/2030</td>
</tr>
</tbody>
</table>

**Action by:** Airspace Users

**Description & purpose:**
Install equipment meeting operational requirements for RNP and/or RNAV operations.

**Supporting material(s):**
  - U: [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)
  - U: [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx)

**ATM Master Plan relationship:**
IA(C-04b)-Flight management and guidance for RNP 0.3 (Category H(rotorcraft)) in all phases of flight, except final approach and initial missed approach

### Finalisation criteria:
1 - Aircraft have been fitted with suitable RNP and/or RNAV aircraft equipment.

### NAV12-USE02

**Train flight crews in RNP and/or RNAV ATS routes**

<table>
<thead>
<tr>
<th>From:</th>
<th>By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/08/2018</td>
<td>06/06/2030</td>
</tr>
</tbody>
</table>

**Action by:** Airspace Users

**Description & purpose:**
Provide sufficient training to crew (e.g. simulator, training device, or aircraft) on the aircraft RNP system to the extent that the pilot is familiar with RNP and/or RNAV equipment operating procedures and system-specific information.
**Note:** Operators need not establish a separate training programme if they already integrate RNAV training as an element of their training programme. However, the operator should be able to identify the aspects of RNP 0.3 operations covered within their training programme.

Url : [http://www.icao.int/publications/Pages/catalogue.aspx](http://www.icao.int/publications/Pages/catalogue.aspx) |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| **Finalisation criteria:**  | 1 - Training manuals have been updated to include RNP and/or RNAV equipment operating procedures.  
2 - The aircrew has been trained accordingly. |