

SESAR		Achieved								Multi-N	
AOM21.1		Direct Routing									
REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP	

### Subject matter and scope

Direct Routing Airspace is described as an airspace defined laterally and vertically with a set of entry/exit conditions where published direct routings are available. Direct Routing aims at offering additional route options to the airspace users while maintaining the same level of safety. It offers flexibility and brings more predictability to the system; it is foreseen as an intermediate step towards Free Route Airspace (FRA).

The Direct Routing implementation is coordinated through the NM European Route Network Improvement Plan (ERNIP) and the Network Operations Plan following the Strategic Objectives and Targets set in the Network Strategic Plan and in the Network Manager Performance Plan.

The geographical scope for Direct Routing is defined by PCP IR as the airspace for which the Member States are responsible at and above flight level 310 in the ICAO EUR Region.

**NOTE FOR MILITARY AUTHORITIES:** It is the responsibility of each Military Authority to review this 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 MIL Authorities.

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

<b>Applicability Area</b> (All ECAC States, at and above FL310 (not applicable for those States that have already implement FRA or planned to deploy FRA at and above FL310 before 1 January 2018))		All EU SES States except: Belgium, Bosnia and Herzegovina, Bulgaria, Estonia, Finland, Hungary, Latvia, Luxembourg, Morocco, Netherlands, North Macedonia, Norway, Portugal, Romania, Türkiye, United Kingdom. Plus: Bosnia and Herzegovina, Morocco, North Macedonia, Türkiye, United Kingdom			
<b>Timescales:</b>		<b>From:</b>	<b>By:</b>	<b>Applicable to:</b>	
Initial Operational Capability		01/01/2015		Applicability Area	
Full Operational Capability			31/12/2017	Applicability Area	

### References

#### European ATM Master Plan

Ol step -	<a href="#">[AOM-0401]-Multiple Route Options &amp; Airspace Organisation Scenarios</a>								
	Enablers -	None							
Ol step -	<a href="#">[AOM-0402]-Further Improvements to Route Network and Airspace incl. Cross-Border Sectorisation and Further Routing Options</a>								
	Enablers -	None							
Ol step -	<a href="#">[AOM-0500]-Direct Routing for flights both in cruise and vertically evolving for cross ACC borders and in high complexity environments.</a>								
	Enablers -	AAMS-06c AOM19.5	AAMS-09a AOM19.5	AAMS-11 AOM19.5	AAMS-16a	ER APP ATC 129 ATC12.1	ER APP ATC 75	ER ATC 91 ATC12.1	NIMS-21a FCM10
		NIMS-29	NIMS-42 AOM19.5	STD-033	STD-061	STD-062	STD-063	STD-064	

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

- Regulation (EU) No 677/2011 laying down detailed rules for the implementation of air traffic management (ATM) network functions and amending Regulation (EU) No 691/2010
- Regulation (EU) No 716/2014 on the establishment of the Pilot Common Project

#### Essential Operational Changes

Fully Dynamic and Optimised Airspace
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#### SESAR Solution

<b>AOM21.1</b>	<b>Direct Routing</b>
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## ICAO GANP - ASBUs

FRT0-B0/1	Direct routing (DCT)
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## Deployment Programme

- none -	
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## European Plan for Aviation Safety

- none -	
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## Operating Environments

En-Route
Network

## Stakeholder Lines of Action (SLoAs)

SLoA ref.	Title	From	By
<b>AOM21.1-ASP01</b>	Implement procedures and processes in support of the network dimension	01/01/2015	31/12/2017
<b>AOM21.1-ASP02</b>	Implement system improvements	01/01/2015	31/12/2017
<b>AOM21.1-ASP03</b>	Implement procedures and processes in support of the local dimension	01/01/2015	31/12/2017
<b>AOM21.1-ASP04</b>	Implement transversal activities (verification at local/regional level, safety case and training)	01/01/2015	31/12/2017
<b>AOM21.1-NM01</b>	Implement system improvements	01/01/2015	31/12/2017
<b>AOM21.1-NM02</b>	Implement procedures and processes	01/01/2015	31/12/2017

Description of finalised and deleted SLoAs is available on the eATM Portal @ [https://www.eatmportal.eu/working/depl/essip\\_objectives](https://www.eatmportal.eu/working/depl/essip_objectives)

## Expected Performance Benefits

<b>Safety:</b>	Although the main benefits are expected in the area of environment and operational efficiency Direct Routing implementation has the ambition to at least maintain the current level of safety.
<b>Capacity:</b>	-
<b>Operational Efficiency:</b>	Savings in route distances and fuel efficiency through increased use of preferred flight profiles and improved sectorisation.
<b>Cost Efficiency:</b>	-
<b>Environment:</b>	Reductions in emissions through use of more optimal routes.
<b>Security:</b>	-

## Detailed SLoA Descriptions

<b>AOM21.1-ASP01</b>	<b>Implement procedures and processes in support of the network dimension</b>	<b>From:</b>	<b>By:</b>
		01/01/2015	31/12/2017
<b>Action by:</b>	<b>ANS Providers</b>		
<b>Description &amp; purpose:</b>	Take the following actions: -Identify the Direct Routing airspace volume (Lateral and Vertical) and applicable time -Direct Routings co-Exists with ATS route structure -Identify Direct Routing entry and exit points -Adapt Airspace design and ensure DIRECT ROUTING horizontal and vertical connectivity -Validate airspace design with NM -ATFCM Direct Routing procedures -Adapt RAD applicability -Validate RAD with NM		
<b>Finalisation criteria:</b>	1 - The DIRECT ROUTING airspace has been identified in coordination with the Network and FAB partners and the RAD has been updated accordingly. 2 - The local ATFCM procedures have been updated in cooperation with the network to take on board the Direct Routing impact.		
<b>AOM21.1-ASP02</b>	<b>Implement system improvements</b>	<b>From:</b>	<b>By:</b>
		01/01/2015	31/12/2017
<b>Action by:</b>	<b>ANS Providers</b>		

AOM21.1		Direct Routing	
Description & purpose:	Take the following actions: <ul style="list-style-type: none"><li>- Upgrades FDP and CWP, if required, related to:</li><li>- Direct Routing clearances;</li><li>- Rerouting capabilities in cases the Direct Routing traversed the military airspace;</li><li>- Differentiation between different traffic type airspaces;</li><li>- Direct route beyond AoR;</li><li>- Calculation of 4D trajectory with Aol;</li><li>- Editing function for 4D trajectories.</li></ul>		
	Note :Additional System improvement which might be required for Direct Routings are covered by other ESSIP Objectives like ATC 12.1 (MTCD, conflict resolution support information and MONA), ITY-COTR (OLDI), ATC17 (SYSCO) and ATC02.5 (APW). Note: No supporting material defined (subject to stakeholder analysis of the local needs)		
ATM Master Plan relationship:	<a href="#">[AAMS-16a]-Airspace management functions equipped with tools able to deal with free-routing</a> <a href="#">[ER APP ATC 15]-Flight Data Processing: support Dynamic Sectorisation and Dynamic Constraint Management.</a> <a href="#">[ER APP ATC 75]-Enhance FDP for Direct Route and Free Route Operations</a>		
Finalisation criteria:	1 - The ANSP system has been upgraded according to the specifications representing the identified necessary changes		
AOM21.1-ASP03	Implement procedures and processes in support of the local dimension	From: 01/01/2015	By: 31/12/2017
Action by:	ANS Providers		
Description & purpose:	Take the following actions: <ul style="list-style-type: none"><li>-Adapt the LoA with adjacent ATS units</li><li>-Publish relevant data for Direct Routing in AIP</li><li>-Charts for Direct Routing operations</li><li>-Airspace management procedure for the implementation of Direct Routings</li><li>-ASM Procedures for identifying and promulgating Direct Routing areas</li><li>-ATC procedures to cover Direct Routing co-ordination and transfer of control, trajectory change in Direct Routing environment, conflict detection</li><li>-Validate airspace design, RAD and ASM procedures with NM.</li></ul>		
Supporting material(s):	EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 1 - European Airspace Design Methodology - Guidelines - 2.0 / 12/2018 Url : <a href="https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-1">https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-1</a>		
ATM Master Plan relationship:	<a href="#">[ER APP ATC 15]-Flight Data Processing: support Dynamic Sectorisation and Dynamic Constraint Management.</a> <a href="#">[ER APP ATC 75]-Enhance FDP for Direct Route and Free Route Operations</a>		
Finalisation criteria:	1 - The Direct Routing airspace has been described and published in the AIP, RAD and/or the charts 2 - The Letters of Agreement have been updated if necessary 3 - The ASM and ATC procedures have been updated to take on board the Direct Routing impact		
AOM21.1-ASP04	Implement transversal activities (verification at local/regional level, safety case and training)	From: 01/01/2015	By: 31/12/2017
Action by:	ANS Providers		
Description & purpose:	Take the following actions: <ul style="list-style-type: none"><li>-Validate the Direct Routing concept (airspace organisation, ATC/ATFCM and ASM procedures, airspace restrictions) based on the local and/or regional conditions</li><li>-Train ATCOs on the application of Direct Routing</li><li>-Develop Direct Routing Safety Argument.</li></ul>		
Supporting material(s):	EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 1 - European Airspace Design Methodology - Guidelines - 2.0 / 12/2018 Url : <a href="https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-1">https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-1</a>		
ATM Master Plan relationship:	<a href="#">[ER APP ATC 15]-Flight Data Processing: support Dynamic Sectorisation and Dynamic Constraint Management.</a> <a href="#">[ER APP ATC 75]-Enhance FDP for Direct Route and Free Route Operations</a>		
Finalisation criteria:	1 - Direct Routing concept has been validated; safety argument has been developed and delivered to the Regulator/NSA/Competent Authority, as appropriate, depending on the severity of the identified risks or the introduction of new aviation standards. 2 - ATCO training has been conducted.		
AOM21.1-NM01	Implement system improvements	From: 01/01/2015	By: 31/12/2017
Action by:	NM		
Description & purpose:	<ul style="list-style-type: none"><li>-Adaptations of NM systems</li><li>-New AUP/UUP template</li></ul>		
Supporting material(s):	EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 4 - RAD Users Manual - 2.0 / 12/2018 Url : <a href="https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-4">https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-4</a>		
ATM Master Plan relationship:	<a href="#">[AAMS-16a]-Airspace management functions equipped with tools able to deal with free-routing</a> <a href="#">INIMS-29I-Network DCB sub-system enhanced for Network Operations Plan (NOP) preparation and dissemination</a>		

AOM21.1	Direct Routing		
<b>Finalisation criteria:</b>	1 - The required adaptations of NM systems (IFPS and Airspace Management tools) to support Direct Routing have been deployed		
<b>AOM21.1-NM02</b>	<b>Implement procedures and processes</b>	<b>From:</b>	<b>By:</b>
		01/01/2015	31/12/2017
<b>Action by:</b>	<b>NM</b>		
<b>Description &amp; purpose:</b>	Take the following actions in coordination with ANSPs: -Identify the Direct Routing airspace volume (Lateral and Vertical) and applicable time -Identify Direct Routing entry and exit points -Adapt Airspace design and ensure Direct Routing horizontal and vertical connectivity -Validate airspace design with NM -ATFCM Direct Routing procedures -Adapt RAD applicability - Validate airspace design, RAD and ASM procedures with ANSPs.		
<b>Supporting material(s):</b>	EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 2 - European ATS Route Network - Version 2019-2024 - June 2019 / 07/2019 Url : <a href="https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-2">https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-2</a> EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 3 - Airspace Management Handbook - Guidelines for Airspace Management - 5.5 / 11/2017 Url : <a href="https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-3">https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-3</a> EUROCONTROL - European Route Network Improvement Plan (ERNIP) Part 4 - RAD Users Manual - 2.0 / 12/2018 Url : <a href="https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-4">https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-4</a>		
<b>Finalisation criteria:</b>	1 - European Airspace has been updated with the integration of the coordinated Direct Routing definition 2 - Route Availability Document has been updated accordingly		