SES	Removed				1	EU+			
ITY-SPI			Surveillance Performance and Interoperability						
REG ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

## Subject matter and scope

This SES-related implementation objective is derived from Regulation (EU) No 1207/2011 (as amended), laying down requirements on the systems contributing to the provision of surveillance data, their constituents and associated procedures in order to ensure the harmonisation of performance, the interoperability and the efficiency of these systems within the European air traffic management network (EATMN) and for the purpose of civil- military coordination (SPI-IR).

Regulation (EU) No 1207/2011 (as amended) applies to the surveillance chain (as defined in Article 3(6) of the Regulation) constituted of:

(a) airborne surveillance systems, their constituents and associated procedures;

(b) ground-based surveillance systems, their constituents and associated procedures;

(c) surveillance data processing systems, their constituents and associated procedures;

(d) ground-to-ground communications systems used for distribution of surveillance data, their constituents and associated procedures.

Regulation (EU) No 1207/2011 (as amended) applies to all flights operating as general air traffic in accordance with instrument flight rules within the airspace provided for in Article 1(3) of Regulation (EC) No 551/2004 with the exception of Articles 7(3) and 7(4) which apply to all flights operating as general air traffic. This Regulation applies to air traffic service providers which provide air traffic control services based on surveillance data, and to communication, navigation or surveillance service providers which operate systems laid down in paragraph 1 of the Regulation itself.

Regulation (EU) No 1207/2011 (as amended) should be read in conjunction with the existing locally published requirements that European States already have in force on the subject matter.

The timescales identified in the objective as well as the possible exemptions reflect the amendments published through the Commission Implementing Regulation (EU) No 2020/587 published in April 2020.

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 military authorities.

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

Applicability Area			
Timescales:	From:	By:	Applicable to:
Entry into force of regulation	13/12/2011		Applicability Area
ATS unit operational capability		12/12/2013	Applicability Area
EHS and ADS-B Out in transport-type State aircraft		07/12/2020	Applicability Area
ELS in transport-type State aircraft		07/12/2020	Applicability Area
Ensure training of MIL personnel		07/12/2020	Applicability Area
Retrofit aircraft capability		07/12/2020	Applicability Area

#### References

#### **European ATM Master Plan**

OI step -	- No OI Link	<u>-</u>				
	Enablers -	GSURV-0101				
Logondi		Covered by SLoA(s) in	WXYZ-002	Covered by SLoA(s) in another objective	ve WXYZ-	Not covered in the
Legenu.	VVATZ-001	this objective	zzz	Objective covering the enabler	003	Implementation Plan

#### Applicable legislation

Regulation (EC) No 1207/2011 of 22 November 2011 for the performance and the interoperability of surveillance (SPI-IR);

#### **Essential Operational Changes**

- none -

#### **SESAR Solution**

## ICAO GANP - ASBUs

- none -

### **Deployment Programme**

- none -

#### **European Plan for Aviation Safety**

RMT.0519	Maintaining CS-ACNS
RMT.0679	Revision of surveillance performance and interoperability (SPI)

#### **Operating Environments**

Airport	
En-Route	
letwork	
Ferminal Airspace	

# Stakeholder Lines of Action (SLoAs)

SloA ref.	Title	From	Ву
ITY-SPI-REG01	Conduct safety oversight for the existing surveillance chain		05/02/2015
ITY-SPI-ASP01	Ensure interoperability of surveillance data		12/12/2013
ITY-SPI-ASP02	Conduct Safety Assessment for the existing surveillance chain		05/02/2015
ITY-SPI-ASP03	Conduct Safety Assessment for changes introduced to the surveillance infrastructure		12/12/2013
ITY-SPI-ASP04	Ensure the training of personnel		12/12/2013
ITY-SPI-MIL01	Carriage and operation of Mode S Elementary Surveillance avionics		07/12/2020
ITY-SPI-MIL02	Carriage and operation of Mode S Enhanced Surveillance and ADS-B Out avionics		07/12/2020
ITY-SPI-MIL03	Ensure the training of personnel		07/12/2020
ITY-SPI-USE01	Carriage and operation of Mode S Elementary Surveillance avionics by aircraft with an individual certificate of airworthiness first issued on or after 8 January 2015	DELETED	
ITY-SPI-USE02	Carriage and operation of ADS-B Out avionics by aircraft with an individual certificate of airworthiness first issued on or after 8 June 2016	DELETED	
ITY-SPI-USE03	Carriage and operation of Mode S Enhanced Surveillance avionics by aircraft with an individual certificate of airworthiness first issued on or after 8 June 2016	DELETED	
ITY-SPI-USE04	Carriage and operation of Mode S Elementary Surveillance avionics		07/12/2020
ITY-SPI-USE05	Carriage and operation of ADS-B Out avionics		07/12/2020
ITY-SPI-USE06	Carriage and operation of Mode S Enhanced Surveillance avionics		07/12/2020
ITY-SPI-USE07	Ensure the training of personnel		07/12/2020
Description of finalised	and deleted SLoAs is available on the eATM Portal @ https://www.eatmportal.eu/worki	ng/depl/essip_obj	ectives

# **Expected Performance Benefits**

Safety:	Improved safety through the deployment of surveillance solutions in non-radar areas.
Capacity:	Capacity increase through the deployment of surveillance solutions in areas where currently procedural separation is applied.
Operational Efficiency:	The application of surveillance based separation instead of procedural separation will allow the airspace users to fly more efficient trajectories.
Cost Efficiency:	-
Environment:	-
Security:	-

# **Detailed SLoA Descriptions**

ITY-SPI-REG01	Conduct safety oversight for the existing surveillance chain	From:	By:
		-	05/02/2015
Action by:	National Supervisory Authorities (NSAs)		

Created on 29/09/2023 7:53

Description & purpose:	Verify that the necessary safety assessments for the existing surveillance chain (systems identified in Art. 2.1 (b), (c) and (d) of Regulation (EU) No 1207/2011 (SPI-IR)), as required by Art 9.1 of the Regulation are conducted by the parties concerned and review, as appropriate, the safety assessment report(s) before their acceptance.					
	Note :'existing' refers to systems in place at the date of entry into force o	f Regulation (EU) 1207/	2011			
Supporting material(s):	EC - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 - (OJ L 62, 8.03.2017, p. 1) - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 10/2011					
	Url : <u>https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:3</u>	2017R0373&from=EN				
Finalisation criteria:	<ol> <li>Safety assessment to existing surveillance chain (see SLoA descripti delivered to the NSA. The NSA has reviewed the safety assessment as has been communicated to the ANSP.</li> </ol>	on) has been conducted appropriate and the out	by the ANSP and come of the assessment			
		From:	By:			
ITY-SPI-ASP01	Ensure interoperability of surveillance data	-	12/12/2013			
Action by:	ANS Providers	1				
Description & purpose:	As required by Article 5(1) of the Regulation (EU) No 1207/2011 (SPI-IR interoperability of all surveillance data transferred from their ground-base data processing systems to other navigation service providers are subject to the service providers are subject.	) , air navigation service ed surveillance systems ct to a common protocol	providers shall ensure and their surveillance			
	Note :The ASTERIX Standard has been transposed into a EUROCONT recognition as Community Specification by the European Commission.	ROL Specification which	may be considered for			
Supporting material(s):	EUROCONTROL - SPEC 147 - EUROCONTROL Specification for ATM Volumes 1 and 2 - Edition 1.1 / 09/2015	Surveillance System Pe	erformance (ESASSP) -			
	Url : <u>https://www.eurocontrol.int/publication/eurocontrol-specification-atm</u> EUROCONTROL - SPEC-149 - EUROCONTROL Specification for Surv Structured EUROCONTROL Surveillance Information Exchange (ASTER	n-surveillance-system-pe eillance Data Exchange RIX) - Edition 2.4 / 10/20	erformance-esassp - Part 1 All Purpose 116			
	Url : https://www.eurocontrol.int/asterix					
Finalisation criteria:	<ul> <li>1 - All surveillance data transferred from their ground-based surveillance systems to other navigation service providers:</li> <li>a) are subject to a data format that is agreed between the parties concer</li> <li>b) allow identification of the data source and identification of the type of oc) are time stamped and expressed as coordinated universal time (UTC)</li> </ul>	ned; data;	eillance data processing			
		From:	By:			
ITY-SPI-ASP02	Conduct Safety Assessment for the existing surveillance chain	-	05/02/2015			
Action by:	ANS Providers					
Description & purpose:	Conduct a safety assessment: for all existing ground-based surveillance and ground-to-ground communications systems used for the distribution required in Art. 9.1 and Annex VI of SPI-IR.	systems, surveillance d and processing of surve	ata processing systems eillance data, as			
	Note :'existing' refers to systems in place at the date of entry into force o	f Regulation (EU) 1207/	2011			
Derogations:	The SLoA does not apply to ANSP which do not use or do not provide su	urveillance data.				
Supporting material(s):	EC - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 - (OJ L 62, 8.03.2017, p. 1) - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amendiang Regulation (EL) No 677/2011 03/2017					
	Url : https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32	2017R0373&from=EN				
	EUROCONTROL - SPEC 147 - EUROCONTROL Specification for ATM Volumes 1 and 2 - Edition 1.1 / 09/2015	Surveillance System Pe	erformance (ESASSP) -			
	Url : https://www.eurocontrol.int/publication/eurocontrol-specification-atm	n-surveillance-system-pe	erformance-esassp			
	EUROCONTROL - EAM 4 - ESARR 4 - Risk Assessment and Mitigation in ATM - Edition 1.0 / 04/2001					
	Url : https://www.eurocontrol.int/publication/esarr-4-risk-assessment-and	-mitigation-atm				
	EUROCONTROL - Air Navigation Systems Safety Assessment Methodo	logy (SAM) - Version 2.	1 / 11/2006			
Url : https://www.eurocontrol.int/tool/safety-assessment-methodology						
Finalisation criteria:	1 - Safety assessment to all existing systems (see SLoA description) has	s been developed and d	elivered to the NSA.			
	Conduct Safety Assessment for changes introduced to the	From:	By:			
ITY-SPI-ASP03	surveillance infrastructure	-	12/12/2013			
Action by:	ANS Providers					

Description & purpose:	Conduct a safety assessment of the changes introduced to systems and associated procedures, identified in Art. 2.1 (b), (c) and (d) of SPI-IR in order to achieve compliance with Article 9.2 of the aforementioned regulation.					
	The tasks to be done are as follows: - Conduct hazard identification, risk assessment in order to define safety objectives and safety requirements mitigating the risks:					
	<ul> <li>Develop safety assessment;</li> <li>Deliver a safety assessment report to the NSA, if new standards are applicable or if the severity class of identified risks is 1 or 2.</li> </ul>					
	This safety assessment shall be based on fully validated/recognised method.					
Derogations:	The SLoA does not apply to ANSP which do not use or do not provide	surveillance data.				
Supporting material(s):	EC - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 - (OJ L 62, 8.03.2017, p. 1) - COMMISSION IMPLEMENTING REGULATION (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 03/2017					
	Url : https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:	32017R0373&from=EN				
	EUROCONTROL - SPEC 147 - EUROCONTROL Specification for ATI Volumes 1 and 2 - Edition 1.1 / 09/2015	M Surveillance System P	erformance (ESASSP) -			
	Url : https://www.eurocontrol.int/publication/eurocontrol-specification-at	m-surveillance-system-p	erformance-esassp			
	EUROCONTROL - EAM 4 - ESARR 4 - Risk Assessment and Mitigation	on in ATM - Edition 1.0 / (	04/2001			
	Url : https://www.eurocontrol.int/publication/esarr-4-risk-assessment-ar	nd-mitigation-atm				
	EUROCONTROL - Air Navigation Systems Safety Assessment Method	dology (SAM) - Version 2	.1 / 11/2006			
	Url : https://www.eurocontrol.int/tool/safety-assessment-methodology					
Finalisation criteria:	1 - The safety assessment report including safety arguments for the ch notification of acceptance was received as appropriate.	anges has been delivere	ed to the NSA and a			
	Ensure the training of personnel	From:	By:			
111-361-43604	Ensure the training of personnel	-	12/12/2013			
Action by:	ANS Providers	- '				
Description & purpose:	Ensure the training of their personnel affected by system and procedur	al changes introduced by	compliance to SPI-IR.			
	The tasks to be done are as follows: - Develop a training package (material); - Update the training plans; - Determine staff population to be trained; - Apply the training plans.					
Finalisation criteria:	<ol> <li>The training plans have been updated and a training package has to 2 - All personnel affected by the changes to the surveillance infrastruct</li> </ol>	een developed. ure have been trained.				
	Carriage and operation of Mode S Elementary Surveillance	From:	By:			
ITY-SPI-MIL01	avionics	-	07/12/2020			
Action by:	Military Authorities					
Description & purpose:	Equip and certify for operational use of secondary surveillance radar to Surveillance capability, as set out in Part A of Annex II of the SPI-IR, th with IFR rules.	ransponders having the I ne State aircraft operating	Mode S Elementary g as GAT in accordance			
Derogations:	<ul> <li>In line with Art. 8.3 of SPI-IR and communication to the European Commission:</li> <li>a) compelling technical reasons;</li> <li>b) State aircraft out of service by 01 January 2024;</li> <li>c) Procurement constraints.</li> </ul>					
Supporting material(s):	EUROCAE - ED-73F - Minimum Operational Performance Specificatio Transponders 12/2020	n for Secondary Surveilla	ance Radar Mode S			
	Url : https://eshop.eurocae.net/eurocae-documents-and-reports					
	ICAO - Doc 9871 - Technical Provisions for Mode S Services and Extended Squitter - Advanced Edition / 04/2012 Url : https://store.icao.int/					
Finalisation criteria:	1 - Aircraft have been equipped with Mode S Elementary Surveillance	equipment and certified f	or operational use.			
	Carriage and operation of Mode S Enhanced Surveillance and	From:	By:			
ITY-SPI-MIL02	ADS-B Out avionics	-	07/12/2020			
Action by:	Military Authorities					

Action by:	Airspace Users					
	-		01/12/2020			
ITY-SPI-USE05	Carriage and operation of ADS-B Out avionics	From:	By: 07/12/2020			
		From	By:			
Finalisation criteria:	1 - Aircraft have been equipped with Mode S Elementary Surveillan	ce equipment certified	d as appropriate.			
	Url : <u>https://store.icao.int/</u>					
	ICAO - Doc 9871 - Technical Provisions for Mode S Services and Extended Squitter - Advanced Edition / 04/2012					
	Url : https://eshop.eurocae.net/eurocae-documents-and-reports					
	Transponders 12/2020					
	FUROCAE - FD-73F - Minimum Operational Performance Specification for Secondary Surveillance Radar Mode S					
	U5/2021					
Supporting material(s):	EASA - CS ACNS - Certification Specifications for Airborne Commu	inications Navigation	and Surveillance - Issue 3 /			
	in Part A of Annex II of the SPI-IR the aircraft operating as GAT in a	accordance with IFR r	ules.			
Description & purpose:	Equip with secondary surveillance radar transponders having the M	ode S Elementary Su	rveillance capability, as set out			
Action by:	Airspace Users					
111-5PI-USE04	avionics	-	07/12/2020			
	Carriage and operation of Mode S Elementary Surveillance	From:	By:			
	2 - All personnel affected by the changes to the surveillance ground	infrastructure have b	een trained.			
Finalisation criteria:	1 - The training plans have been updated and a training package ba	as been developed				
	The tasks to be done are as follows: - Develop a training package (material); - Update the training plans; - Determine staff population to be trained; - Apply the training plans;					
Description & purpose:						
Action by:	Figure the training of all their percention officiated by changes introd	used by compliance to				
Action by:	Military Authorition					
ITY-SPI-MIL03	Ensure the training of personnel	From:	By: 07/12/2020			
Finalisation criteria:	1 - Aircraft have been equipped with Mode S Enhanced Surveillanc equipment, and certified for operational use.	e and ADS-B Out (10	90 extended squitter)			
	Url : https://eshop.eurocae.net/eurocae-documents-and-reports					
	Url : https://store.icao.int/ EUROCAE - ED-102A - Minimum Operational Performance Specification for 1090 MHz Extended Squitter Automatic Dependant Surveillance - Broadcast (ADS-B) & Traffic Information Services - Broadcast (TIS-B) with Corrigendum 1 01/2012					
	ICAO - Doc 9871 - Technical Provisions for Mode S Services and E	xtended Squitter - Ad	vanced Edition / 04/2012			
	Url : https://eshop.eurocae.net/eurocae-documents-and-reports					
	Transponders 12/2020	allori for Secondary S				
	UTI : https://eshop.eurocae.net/eurocae-documents-and-reports	ation for Secondary St	urveillance Radar Modo S			
	09/2009					
	EUROCAE - ED-161 - Safety, Performance and Interoperability Rec	quirements Document	t for ADS-B-RAD Application			
	Ut/ : https://www.easa.europa.eu/document-library/certification-spec	cifications/cs-achs-iss	ue-3			
	EASA - CS ACNS - Certification Specifications for Airborne Commu	inications Navigation	and Surveillance - Issue 3 /			
	Url : https://eshop.eurocae.net/eurocae-documents-and-reports					
Supporting material(s):	EUROCAE - ED-126 - Safety, Performance and Interoperability Red 12/2006	quirements Document	t for ADS-B-NRA Application			
Derogations.	<ul> <li>a) compelling technical reasons;</li> <li>b) State aircraft out of service by 01 January 2024;</li> <li>c) Procurement constraints.</li> </ul>					
Derogations <sup>.</sup>	In line with Art 8.3 of SPI-IR and communication to the European C	commission:				
FFF	avionics, as set out in Part B and Part C of Annex II of the SPI-IR the transport-type State aircraft operating as GAT in accordance with IFR rules with a maximum certified take-off mass exceeding 5 700 kg or having a maximum cruising true airspeed capability greater than 250 knots. This is in addition to the capability set out in Part A of that Annex (Mode S Elementary Surveillance).					
Description & purpose:	Equip with and certify for operational use of Mode S Enhanced Surv	veillance and ADS-B (	Out on 1090 Extended Squitter			

Description & purpose:	Equip with secondary surveillance radar transponders having the ADS-B Out on 1090 Extended Squitter capability, as set out in Part B of Annex II of the SPI-IR, the aircraft with a maximum certified take-off mass exceeding 5 700 kg or having a maximum cruising true airspeed capability greater than 250 knots, operating as GAT in accordance with IFR rules.				
	Note :subject to the conditions identified in Article 5 paragraph 5 of Regulation 2020/587, the compliance date may be extended to 7/06/2023				
Supporting material(s):	EUROCAE - ED-126 - Safety, Performance and Interoperability Requirements Document for ADS-B-NRA Application 12/2006				
	Url : <u>https://eshop.eurocae.net/eurocae-documents-and-reports</u> EASA - CS ACNS - Certification Specifications for Airborne Communications Navigation and Surveillance - Issue 3 / 05/2021				
	Url : <u>https://www.easa.europa.eu/document-library/certification-specifications/cs-acns-issue-3</u> EUROCAE - ED-161 - Safety, Performance and Interoperability Requirements Document for ADS-B-RAD Application				
	Url : https://eshop.eurocae.net/eurocae-documents-and-reports				
	EUROCAE - ED-73F - Minimum Operational Performance Specification Transponders 12/2020	for Secondary Surveilla	nce Radar Mode S		
	Url : https://eshop.eurocae.net/eurocae-documents-and-reports				
	ICAO - Doc 9871 - Technical Provisions for Mode S Services and Extern	ded Squitter - Advanced	l Edition / 04/2012		
	Url : <u>https://store.icao.int/</u>				
	EUROCAE - ED-102A - Minimum Operational Performance Specification Dependant Surveillance - Broadcast (ADS-B) & Traffic Information Servi 01/2012	n for 1090 MHz Extende ces - Broadcast (TIS-B)	ed Squitter Automatic with Corrigendum 1		
	Url : https://eshop.eurocae.net/eurocae-documents-and-reports				
Finalisation criteria:	<ol> <li>Aircraft have been equipped with ADS-B Out on 1090 Extended Squi</li> <li>Aircraft have obtained airworthiness approval.</li> </ol>	itter equipment and cert	fied as appropriate.		
ITY-SPI-USE06	Carriage and operation of Mode S Enhanced Surveillance	From:	By: 07/12/2020		
Action by:	Airspace Users				
Description & purpose:	Equip with secondary surveillance radar transponders having the Mode S Enhanced Surveillance capability, as set out in Part C of Annex II of the SPI-IR the fixed wing aircraft with a maximum certified take-off mass exceeding 5 700 kg or having a maximum cruising true airspeed capability greater than 250 knots operating as GAT in accordance with IFR rules.				
	Note :subject to the conditions identified in Article 5 paragraph 5 of Reguestended to 7/06/2023	ulation 2020/587, the co	mpliance date may be		
Derogations:	Aircraft of specific types with a first certificate of airworthiness issued be mass exceeding 5 700 kg or a maximum cruising true airspeed greater t of parameters detailed in Part C of Annex II available on a digital bus on European Commission from complying with the requirements of point (C)	fore 7 June 2020 that ha han 250 knots that do n -board the aircraft may l ) of Article 5(5) of the SF	ave a maximum take off ot have the complete set be exempted by the PI-IR.		
Supporting material(s):	EASA - CS ACNS - Certification Specifications for Airborne Communicat 05/2021	tions Navigation and Su	rveillance - Issue 3 /		
	Url : https://www.easa.europa.eu/document-library/certification-specifica	tions/cs-acns-issue-3			
	EUROCAE - ED-73F - Minimum Operational Performance Specification Transponders 12/2020	for Secondary Surveilla	nce Radar Mode S		
	Url : https://eshop.eurocae.net/eurocae-documents-and-reports				
	ICAO - Doc 9871 - Technical Provisions for Mode S Services and Exten	ded Squitter - Advanced	I Edition / 04/2012		
Finalisation critoria:	1 - Aircraft have been equipped with Mode S Enhanced Surveillance equ	inment certified as ann	ropriate		
	2 - Aircraft have obtained airworthiness approval.				
ITY-SPI-USE07	Ensure the training of personnel	-	ву: 07/12/2020		
Action by:	Airspace Users	'	'		
Description & purpose:	Ensure the training of all their personnel affected by changes introduced	by compliance to SPI-I	R.		
	The tasks to be done are as follows:				
	<ul> <li>Develop a training package (material);</li> <li>Update the training plans;</li> <li>Determine staff population to be trained;</li> <li>Apply the training plans;</li> </ul>				
Finalisation criteria:	<ol> <li>The training plans have been updated and a training package has be</li> <li>All parameters of effected by the phase to the parameters in the property of the parameters in the parameters in</li></ol>	en developed.			
	2 - All personnel affected by the changes to the surveillance infrastructure have been trained.				