

# Civil/Military ATM Cooperation and Flexible Use of Airspace Webinar

Online
20<sup>th</sup>-21<sup>st</sup> Nov 2024

This event is jointly organised with





















### Civil-Military ATM performance measurements



□Civil-Military ATM Cooperation Division & NM Airspace and Capacity Division



### Overview



Civil-military ATM performance approach in European ATM



Flexible Use of Airspace Performance



Military mission ATM effectiveness



PRISMIL-CURA tool





### Civil-military ATM performance approach in European ATM

- Contribute to reaching ATM performance ambitions
- Safeguard national security and defence requirements – military mission effectiveness





# EUROCONTROL

### FUA performance measurement – Regulatory requirements







#### SES Regulatory framework

 Performance and charging scheme regulation

 ATM Network Functions Implementing Rule



#### FUA regulation



L 342/20	IN Offic	Official Journal of the European Union		
	COMMISSIO	IN REGULATION	(EC) No 2150/2005	
		of 23 December	2005	
	laying down con	nmon rules for th	e flexible use of airspace	
		(Text with EEA re	levance)	
THE COMMISSION OF THE EUROPEAN COMMENTERS.  Having regard to the Treaty establishing the European Community.			2001 states that there is a significant scope for improving the current application of the flexible use of airspace within Europe. Common rales for giving effect to that improvement should now be adopted.	
Hering regard to Regulation (IC) No. 551/2004 of the European Parliament and of the Causard of 10 March 2004 on the orga- tionists and our of storque as the imple European (by 1) and in particular defect. 7/6, thereof. Hering regard to Regulation (IC) No. 549/2004 of the European Parliament and the Council of 10 March 2004 Isping down the			The of the flexible use of airspace concept covers al- atropics over the high seas, its application shoul therefore be without preside; to the rights and dark of Member Stans under the Convention on Internation Crid Avisions (Elicago Convention) of 7 Decemb 1944 and its america, or to the 1982 UN Conventio on the Law of the Sea.	
humerock Regulation (1), and in particular Article \$(2); thermit,  Whereas:  (1) Studie use of aimpace is an aimpac manageness concept described by the International Cold Artision Organisation (EAO) and developed by the Intropes			There are activities which require the reservation of volume of aimpact for their enclosive or specific to for determined periods, covery to the characteristics their flight profile or their hazardous arributes and of each to remove districts and also suparation from no participating are radiic.	
Organica as o show white	Deganisation for the Safety of Assistion (Barocorrash, according to which arequare should not be designated as either parely civil or purely military simpoce, but should either be considered as one continuous in which all users' requirements have to be accommodated to the maximum extent possible.		Effective and harmonised application of flexible use of anytoo throughout the Community result clear as consistent rates for civil-enfalary coordination which should take into account all users' requirements as the nature of their various activities.	
Artk the nules full	control has been mandated in accord de 8(1) of Regulation (EC) No 549/200 Commission in the development of im- e on flexible use of airspace. This Regula account of the resulting mandate rep- mither 2004 issued by Eurocontrol.	4 to assist plementing ation takes out of 30	Efficient civil-entitary coordination procedures show rely on rules and standards to ensure efficient use arrapace by all users.	
n) This	Regulation does not cover military opening as referred to in Article 1(2) of Regulative 2004.	ations and	It is essential to further cooperation between neighbouring Member States and to take into account cros-bonder operations when applying the concupt of flexibuse of airspace.	
lens wath requ flexi	Member States undersook, in a Statement in related to the Stugle European Sky (*), is each other, taking into account nation internets, in order to ensure that the ble use of airspace is fully and uniforn it Member States by all users of airspace.	cooperate al military concept of	(i) Differences in the organization of civil-military con- eration in the Community restrict surform and time arrapsor imagement. It is therefore essential identity the persons and/or organizations which as responsible for the application of the flexible use arrapsor concept in every Member State. This informati- thosis the many content of the flexible state of the desired property of the property of the con- tention of the flexible state.	

Do not apply to military training and operations but fully consider and safeguard them



## COMMISSION REGULATION (EC) No 2150/2005 of 23 December 2005 laying down common rules for the flexible use of airspace

#### **State obligations:**

- assess and review the performance of flexible use of airspace operations
- establish mechanisms to archive data on the requests, allocation and actual use of airspace structures for further analysis and planning activities

E 542/20	Official State	Official Journal of the European Union		
	COMMISSION REG	ULATION (I	IC) No 2150/2005	
	of 25	December 3	pes	
	laying down common re	des for the f	Seable use of simpace	
	(Next v	ish BEA roles	(MACH)	
	MESSON OF THE EDISOPEN COMMENTES.	м	2001 statos that there is a significant scope improving the curroot application of the fiestle use aimpass within Europe. Common rules for giving of to that improvement should now be adopted.	
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bened, Whense:  (b) Healthe use of simpace is an simpace management			There are activities which require the recorrection volume of simpoor for their enclarine or specific for determined periods, owing to the characterists their fight profile or their hausedness attributes and need to remove effective and safe separation boom participating are traffic.	
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(t) Th	oreteer 2014 onate by Eurocentral, is Regulation does not cover military operations a tring as referred to in Article 1(2) of Regulation (3 549(2004.	nd	It is essential to further cooperation between ne- bouring Member States and to take into account or honder operations when applying the concept of fire user of streptor.	
be with the	e Member States undertooks, in a Statement on Malis use related to the Neigh European May (5), to compet the each other, taking into account national mells primement, in order to creare that the concept table use of armyou to fully and uniformly appli all Member States by all users of airspace.	ne er ef	Difference in the organization of defi-enlinery or seaton in the Community method underto and dis- sistence amongments. It is therefore sensitive information of the theory of the theory of the order of the communities of the floating responsible for the application of the floating responsible for the application of the floating order owners in even blenches State. This inflames should be made postable to the Member States.	
on Th	e report issued jointly by the functioned Performer	ús:		



# Commission Regulation (EC) No 317/2019 laying down a performance and charging scheme in the single European sky'

### **ANNEX 1 -** KEY PERFORMANCE INDICATORS (KPI) AND **INDICATORS FOR MONITORING**:

- c) The effective use of reserved or segregated airspace calculated as the ratio of the initial requested allocated time for reservation or segregation from general air traffic, at the final allocated time used for the activity requiring such segregation or reservation. The indicator is calculated for all airspace allocations notified to the Network Manager.
- (d) The rate of planning via available airspace structures, including reserved or segregated airspace and conditional routes, for general air traffic calculated as the ration of aircraft filing flight plans via such airspace structures and the number of aircraft that could have planned through those airspace structures.
- e) The rate of using available airspace structures, including reserved or segregated airspace, conditional routes, by general air traffic calculated as the ratio of aircraft flying via such airspace structures and the number of aircraft that could have planned through these airspace structures.

#### REGULATIONS

COMMISSION IMPLEMENTING REGULATION (BL) 2019/317

leying down a performance and charging scheme in the single European sky and rep Implementing Regulations (EU) No 996(3015 and (EU) No 991(2015

(Dat with IEA relevance)

THE REMOVERS COMMISSION

Having regard to the Treaty on the Functioning of the European Uni

Having regard to Regulation (BC) No 549(2004 of the European Farlament and of the Council of 10 March 20 laying down the European for the counties of the single European sky the European Regulation) (\*) and in partice Article 1100 Housed.

Having regard to Regulation (EC) No 350(2004 of the European Parliament and of the Council of 10 March 200 the provision of air savigation services in the single European sky (5, and in purificular Article 15(8) thereof,

#### Wh

- (f) The performance where referred to in Article 11 of Regulation (EC) No. 549(2004 should improve performance of air randgation services and network functions in the single European ske.
  - 0. The chapting advance for at energiptic services referred to in Article 15 of Engelstein (ED). No. 104(2014) is the interpreted to the seasonful engelscentaints of the preference whene and should thendric comprisements. The chapting scheene should contribute to aponer transposture; in the demonstration, imposition may directive entering the design and supplies survices and to end officiency of dispute survices and should contribute to the out efficiency of providing at mongration survices and to efficiency of lighty, while materiality and options provided by lovel. The chapting scheme should be consistent with the Innovarious's disputate present for one outleages and with Article 15 of the 1244 Chapting scheme for each of the chapting scheme for each other scheme should be consistent with the Innovarious's disputate present for one outleages and with Article 15 of the 1244 Chapting scheme for each of the chapting scheme should be consistent with the Innovarious's disputate present for our such design and the Article 15 of the 1244 Chapting scheme should be consistent with the Innovarious's design present for our such design and with article 15 of the 1244 Chapting scheme should be consistent with the Innovarious's design present for our outleast outleast of the 1244 Chapting scheme should be consistent with the Innovarious's design present for our outleast outleast of the 1244 Chapting scheme for our outleast of the 1244 Chapting scheme for our outleast outle
- (3) In the introot of claim, and in order to provide for an adapted regulatory furnework for the third refere parties of the performance scheme, it is accounty to retrie the implementing scheme contained in Corrections Implementing Regulators (EL). No. 190(2011) 5. Corrections Implementing Regulators (EL). No. 191(2013) 5. and to consolidate these provisions in a six implementing Regulators.



#### COMMISSION IMPLEMENTING REGULATION (EU) 2019/123 of 24 January 2019 laying down detailed rules for the implementation of air traffic management (ATM) network functions (Non-legislative acts)

The network manager shall contribute to the overall performance the network, especially regarding the implementation of the performance scheme:

- prepare and implement a Network Performance Plan in accordance with the performance scheme
- establish a process of continuous monitoring of the operational network performance
  - evaluation of airspace utilization aspects from both a civil and military perspective
- **Network Operations Plan** 
  - Network operational performance efficiency
  - Military airspace requirements

#### RECULATIONS

OMMISSION IMPLIMENTING REGULATION (EU) 2019(12)

of 24 January 2019

being down detailed rules for the innformatation of six traffic management (ATM) network nctions and repealing Commission Regulation (EU) No 677/2011

(Test with HEA relevance

Having regard to the Emity on the Functioning of the European Union

Sirting regard to Regulation (IX) No 555/2004 of the European Parliament and of the Council of 10 March 2004 on the expansions and use of the airspect in the single Interprets for airspect Repulsions (1, and in particular Articles 164) and 4(5) thereof.

- The network functions should be a service of general network exemised forlywiths the content of the Intequal air unific management currons (\$1.50.05, horsafor referred to as the network). They should contribute to the contributed everyment of the air respect resembly remoting the required level of performance, interoperability, compatibility and constitution of activities toolsafing those to ensure the optimal one of scarce resources.
- (2) The design of the lumpous more network, the management of the network capacity and air stells: flows and the coordination of scarce resources, an provised for on languations (30, No. 513) (2004, should be without populate to Member State's recognity over their airspace and so their responsibilities relating to public seeks, public ascurity and delence matters on provided for or languations (50, No. 544) (2004 of the turopous Perlament and of the
- The network should include all photoal and operational components that determine the performance of aircraft, in particular finite practicality and flight efficiency, operand in the airquise within the International Civil Arturism Organization (ICAO) II/R region where Monther States are responsible for the provision of air stuffic net/lars.
- 14 The European must network should be designed to improve the efficiency of the notings from a pare-to-ear perspective in all phases of Eight taking particular account of Eight efficiency and environmental aspects.





### Harmonised FUA performance monitoring ERNIP Part 3 "ASM Handbook" – Section 7 FUA Indicators

Set 1: Effectiveness of ASM process in terms of <u>airspace made available</u>
Rate of CDR/Airspace Availability (RoCA/RoAA) represents (in %) the ratio of the total
CDR opening, whatever category it may be, or RSA, to the total during a given time period.

#### Set 2: Indicators on the <u>utilization</u> of the available airspace

Rate of Aircraft Interested (RAI) represents (in %) the ratio of the number of flights planned on an available CDR, or through an RSA to the number of potential users of this CDR or the available RSA.

Rate of Actual Use of CDR/Airspace (RAU) represents (in %) the ratio of the number of flights (AU) having actually used an available CDR or RSA to the number of potential users (PU) of this CDR or RSA.

### **Used for Regulatory requirements**





### Harmonized FUA performance monitoring ERNIP Part 3 "ASM Handbook" – Section 7 FUA Indicators

Effective Use of Reserved or Segregated Airspace (ERSA)

Represents the ratio (in %) between the final allocated time for reservation or segregation from general air traffic, and the initial allocated time used for the activity requiring such segregation or reservation.

The requested allocated time is recorded from the area allocation in the **EAUP**. The final allocated time is recorded from all the subsequent **EUUPs** addressing the concerned area.





**Used for Regulatory requirements** 



### Harmonised FUA performance monitoring ERNIP Part 3 "ASM Handbook" – Section 7 FUA Indicators

Flight Economy Indicators (FEI)

Potential Flight Economy represents (in NM), the economy realised by using a CDR or RSA instead of its alternate (ALTN) route.

Flight Economy Realised

Flight Economy Lost

Flight Economy Offered

**Actual Flight Economy** 





### Military Mission ATM effectiveness







#### Military mission ATM effectiveness assessment

- Optimal routing
- Airspace volume for training
- Location of training area
- Training time inside airspace reservations



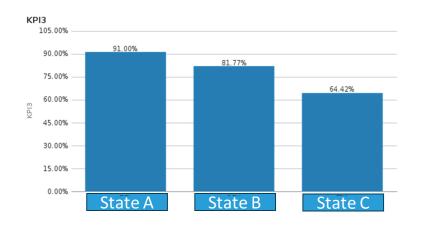
Ensure ATM support to access airspace as required by mission objectives





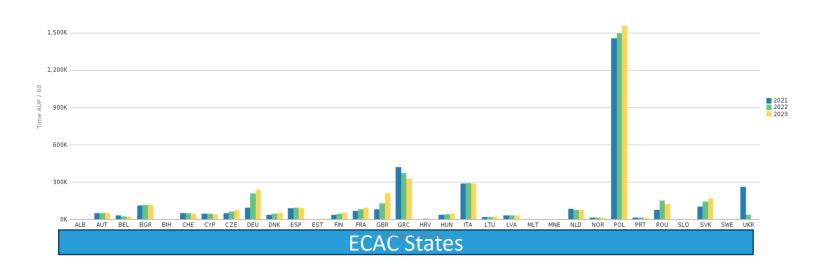
#### Military mission ATM effectiveness Performance Indicators

Time AUP / 60



KPI3 = training time vs. total mission duration time

KPI2 = training time allocation

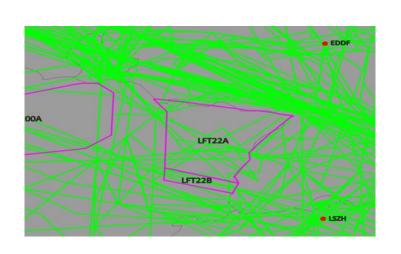


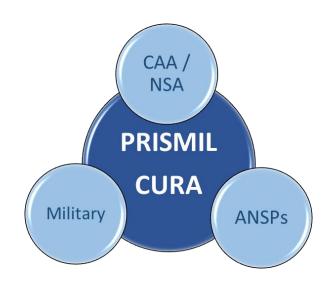


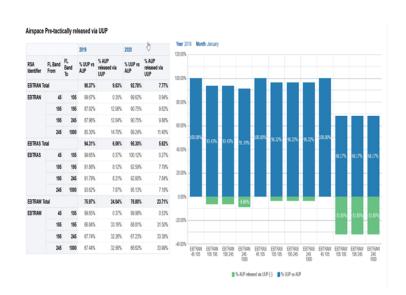


#### **PRISMIL-CURA** tool

# Civil-Military performance monitoring system shared between civil and military authorities







Dual use of analytic and big data technologies - visualized with heatmaps







South American (SAM) Office

Lima