PRB | Performance review body of the single european sky

Air navigation services and infrastructure used for both civil and military airspace users under the performance and charging Regulation of the Single European Sky

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1 INTRODUCTION

1 The Single European Sky (SES) legal provisions, including the performance and charging Regulation[1] apply to the provision of air navigation services (ANS) for general air traffic (GAT) in the SES Member States.[2] Although these do not apply to operational air traffic (OAT) and do not cover military operations, the different arrangements between the civil and the military may have an impact on air navigation charges in the case of use of shared resources between civil and military users. In this case, the proportions of cost attributable to international civil aviation and to the military should be determined in an equitable manner, such that no users are burdened with costs not properly allocable to them according to sound accounting principles.

2 The Member States may also exempt military flights performed under GAT from the payment of user charges. In this case, it should be ensured that the cost of such exemption is not passed on to other airspace users.

3 Neither the performance plans, nor the monitoring reports, nor the charging reporting tables provide sufficient information to understand how the ANS and infrastructure is shared between the civil and the military, and how the costs relating to exempted military flights are impacting the costs charged to airspace users.

4 The aim of the study is threefold:

- To increase the transparency on the costs charged to airspace users3 by the Air Navigation Service Providers (ANSPs) in the SES Member States, as required by the service provision Regulation4 and the performance and charging Regulation;5
- To provide an overview of the current arrangements between civil and military entities and to increase the overall knowledge in the cost allocation methods across the SES Member States; and
- To evaluate the magnitude of the shared resources and the costs of exemptions of military flights on the en route costs charged to airspace users.

1.1 Data sources

5 The source of the analysis is the questionnaire elaborated by the PRB and submitted by the National Supervisory Authorities (NSAs) ("Air navigation services and infrastructure used for both civil and military airspace users" – Annex, Section 2).

6 This questionnaire was sent to the NSAs on 8th March 2023. NSAs were requested to send their replies by 25 April 2023. The replies to 26 questionnaires are considered in the study.[6] Three NSAs had not sent their replies by the time of completing the study (Annex, Section 3).

7 To completement the information received, the study also considered publicly available information from stakeholders, including NSAs, ANSPs, the Network Manager (NM), the Eurocontrol Central Route Charges Office (CRCO), the European Defence Agency (EDA), and the European Union Aviation Safety Agency (EASA).

1.2 Fact-validation with the NSAs

8 The clarity and quality of the answers provided by the NSAs are varied as several questions were left unanswered, and others were not properly understood. Hence the PRB had to make some interpretations, which needed to be validated by the NSAs. To this end, a fact-validation exercise of the report and its annex took place with the NSAs between 31st July and 28th September.

[1] Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the Single European Sky.
[2] The EU Member States, as well as Norway and Switzerland.
[3] Focussing on the costs relating to the en route charging zones.
[4] Regulation (EC) No 550/2004 of the European Parliament and the Council of 10 March 2004 on the provision of air navigation services in the Single European Sky Articles 14 and 15.
[5] Performance and charging Regulation (EU) 2019/317 Article 24 (1).
[6] Covering 25 Member States, 26 ANSPs (one per Member State and one for MUAC), 26 en route charging zones (one per Member State, except for Spain which has two en route charging zones, Spain Continental and Spain Canarias).

1.3 Structure of the report

9 This report consists of the following sections:

- Section 1 introduces the context and objectives (current section).
- Section 2 provides an overview of the regulatory framework.
- Section 3 presents the organisation for the provision of ANS between civil and military (Part I of the questionnaire). This reflects the existing organisation at en route level in the SES Member States, as well the information on the aerodromes controlled and operated by the military which are also used for GAT instrument flights rules (IFR) flights (provided by the NSAs on an optional basis).
- Section 4 presents the ANS infrastructure and services used for both civil and military airspace users (Part II of the questionnaire), including:
- The ANS infrastructure and services provided or made available by the civil ANSPs to non-GAT military flights and how these are financed; and
- The reversed situation: The ANS infrastructure and services provided or made available by the military to GAT flights, the associated costs and how these are financed.
- Section 5 looks at the implementation and operation of Flexible Use of Airspace (FUA) (Part III of the questionnaire) in terms of associated costs and their financing.
- Section 6 analyses the GAT IFR military flights exempt from the payment of en route charges (Part IV of the questionnaire). In particular, it examines the service units for exempted military flights at Union-wide level, and the financing of costs for services provided to these en route exempted GAT IFR military flights.
- Section 7 provides the PRB conclusions and recommendations.

10 The report is complemented by one Annex, providing details on:

- 1. Acronyms;
- 2. PRB questionnaire to the NSAs on “Air navigation services and infrastructure used for both civil and military airspace users”;
- 3. List of replies received by NSAs on the PRB questionnaire;
- 4. Actual number of en route service units for exempted GAT IFR flights 2018-2020;
- 5. PRB analysis of the individual NSA replies to the questionnaires; and
- 6. PRB computations of the amounts to be financed by the Member States in respect of ANS provided to exempted GAT military flights.

2 REGULATORY FRAMEWORK

11 This section introduces the regulatory documents of relevance to the study, describing the SES regulatory framework and other regulatory and guidance material from ICAO and Eurocontrol.

2.1 SES regulatory framework

12 The SES regulations apply only to general air traffic and do not cover military operations and training.[7] The EU Member States nevertheless committed to enhance civil-military cooperation to guarantee a balanced consideration of economic as well as security and defence requirements and to enable the full and uniform application of the concept of FUA in all Member States by all users of airspace.[8]

13 The SES legislative framework evolved through consecutive revisions since its establishment in 2004 to a performance-based regulatory approach. It aims at enhancing safety and overall efficiency of GAT in Europe by establishing a harmonised regulatory framework for air traffic management in Europe. It consists of five basic Regulations, as well as implementing rules adopted by the Commission on these Regulations. The basic Regulations and the implementing rules of relevance to this study are:

- The framework Regulation (No 549/2004), establishes the different institutional, regulatory and consultation arrangements to enable the creation of the SES.9
- The service Provision Regulation (No 550/2004) institutes a harmonised system of certification based on common requirements for air navigation services and lays down rules for designating service providers, as well as the concept of common projects and a common charging scheme for air navigation services.10
- The airspace Regulation (No 551/2004) aims at defragmenting European airspace and at supporting the concept of a progressively more integrated operating airspace and at establishing common procedures for design, planning, and management for the efficient and safe performance of air traffic management.11
- The interoperability Regulation (No 552/2004), of which the objective was "to achieve interoperability between the different systems, constituents and associated procedures of the European Air Traffic Management Network (EATMN), taking due account of the relevant international rules" and to ensure "the coordinated and rapid introduction of new agreed and validated concepts of operations or technology in air traffic management".12 This Regulation was repealed by Regulation No 2018/1139 (see below), however certain provisions continue to apply until the date of application of the relevant replacing acts (and in any case not later than 12th September 2023).
- Standardized European Rules of the Air (No 923/2012) is a European Regulation laying down the common rules of the air and operational provisions regarding services and procedures in air navigation.13
- The EASA basic Regulation (No 2018/1139) lays down common rules in the field of civil aviation and establishes a European Union Aviation Safety Agency.14 Although not directly applicable to the military, parts of the Regulation address civil-military coexistence and cooperation on safety, as well as the implementation of FUA.
- The performance and charging scheme Regulation (No 2019/317) aims at improving the performance of air navigation services in the SES and at contributing to greater transparency in the determination, imposition and

[7] Article 1(2) of Regulation (EC) 549/2004 on the organisation and use of the airspace in the Single European Sky (the framework Regulation).
[8] Statement by the Member States on military issues related to the Single European Sky, 31.3.2004.
[9] Regulation (EC) 549/2004 laying down the framework for the creation of the Single European Sky.
[10] Regulation (EC) No 550/2004 on the provision of air navigation services in the Single European Sky.
[11] Regulation (EC) No 551/2004 on the organisation and use of the airspace in the Single European Sky.
[12] Regulation (EC) No 552/2004 on the interoperability of the European Air Traffic Management network, repealed by 2018/1139.
[13] Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010.
[14] Regulation (EU) 2018/1139 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency.

enforcement of charges to airspace users under GAT.15

- The FUA Regulation (Regulation (EU) No 2150/2005) addresses airspace management at strategic, pre-tactical, and tactical levels to ensure efficient use of airspace in order to increase safety and airspace capacity, and to improve the efficiency and flexibility of aircraft operations for the benefit of both civil and military airspace users.16
- The common requirements Regulation (No 2017/373) requires Air Traffic Service Providers (ATSPs) to provide appropriate military units with pertinent flight plan and other data concerning flights of civil aircraft. This aims at facilitating their identification and having facilities for rapid and reliable ground-ground communication between Air Traffic Services (ATS) civil and military units.17
- The CP1 Regulation (Regulation (EU) No 2021/116) foresees a set of ATM functionalities to be deployed in a timely, coordinated, and synchronised way to achieve the essential operational changes stemming from the European ATM Master Plan.18 Civil-military cooperation is addressed and supported by several functionalities, noting that implementing Advanced-FUA (A-FUA) is part of one of the five ATM functionalities of the CP1 (AF3, section 3.1.1).

2.2 Other regulatory and guidance documents relevant to the study

14 The Single European Sky regulatory framework was developed in line with the principles laid down by the 1944 Chicago Convention on International Civil Aviation and takes account of the obligations of the Member States stemming from the Eurocontrol revised Convention.[19] Rules and guidance material from these two organisations are often useful to complement the SES regulatory provisions.

ICAO policy and guidance

15 The ICAO Chicago Convention on International Civil Aviation (Article 3) is only applicable to civil aircraft and not to State aircraft. However, it requires that the "contracting States undertake, when issuing regulations for their state aircraft, that they will have due regard for the safety of navigation of civil aircraft".[20] Article 28 and relevant annexes (e.g., ICAO Annex 2 and Annex 11) require Member States to provide services and sufficient navigational facilities for international air navigation. Member States of the Chicago Convention have committed to finding a balanced approach to airspace management while accommodating the needs of international traffic flows and national security.

16 The basic principles of this cooperation, and the importance of information management are defined in ICAO Doc 9584 Global Air Traffic Management Operational Concept, and associated documents, such as:

- ICAO Circular 330-AN/189 Civil/Military Cooperation in Air Traffic Management;
- ICAO Doc 9554 - Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations; and
- Doc 10088 - Manual on Civil-Military Cooperation.

17 The principles for ANS financing are laid out in ICAO Doc 9082 ICAO's Policies on Charges for Airports and Air Navigation Services, and associated documents (e.g., Doc 9161 Manual on Air Navigation Services Economics).

Eurocontrol rules and guidance

18 Relevant documents from Eurocontrol include, in respect of civil-military cooperation:

- EUROCONTROL Guidelines for the implementation of the Single European Sky legislation by the military (14/07/2009).

[15] Regulation (EU) 2019/317 laying down a performance and charging scheme in the Single European Sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013.
[16] Regulation (EC) No 2150/2005 laying down common rules for the flexible use of airspace.
[17] Regulation (EU) 2017/373 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight.
[18] Regulation (EU) 2021/116 on the establishment of the Common Project One.
[19] Regulation (EC) 549/2004, whereas 4) and Article 1(3).
[20] Aircraft used in military, customs and police services.

- EUROCONTROL Publication for harmonised Rules for OAT under IFR inside controlled Airspace of the ECAC Area (05/05/2023), EUROAT.
- EUROCONTROL Guidelines for a harmonised and improved OAT FPL21 implementation (09/07/2021).

19 In respect of air navigation cost bases and charges, from the Central Route Charges Office:

- Conditions of Application of the Route Charges System and Conditions of Payment, Doc. N° 21.60.02 November 2021.
- Principles for establishing the cost base for en route charges and the calculation of the unit rates, Doc. N° 20.60.01 January 2020.
- Guidance on the route charges system, Edition June 2012.

[21] Flight Plan.

3 ORGANISATION FOR THE PROVISION OF ANS BETWEEN CIVIL AND MILITARY

20 This section presents the organisation for the provision of ANS between civil and military (Part I of the questionnaire), reflecting the existing organisation at en route level in the SES Member States, as well as the information on aerodromes controlled and operated by the military, which are also used to a significant extent for civilian GAT IFR flights (optional question).

21 The aim of this section is to better understand how the provision of ANS is organised in the SES Member States in respect of the cooperation between the civil ANSPs concerned and the military for the en route services. This information is also useful to understand the types of services and infrastructure provided or made available by the civil ANSPs to military flights in the different basic models (analysed in Section 4.2), as well as their impact on the costs for implementing and operating FUA (analysed in Section 5.2).

22 Finally, this section also presents the list of military aerodromes used (to a significant extent) for civilian traffic, which have an impact on the services provided by the military for both en route and terminal (Section 4.3)

3.1 Regulatory requirements/guidance

23 The level of civil-military cooperation is supported by the guidance material developed on ICAO and EU levels.

24 Some regulatory requirements regulate the cooperation and data sharing between the civilian and military service providers.

25 Through the SES regulatory framework (notably the airspace Regulation and repealed in the EASA basic Regulation, Annex VIII section 2.8), Member States are required to implement Airspace Management (ASM) to support the uniform application of the concept of the flexible use of airspace. ANSPs are required to implement – to the extent necessary – systems and their constituents to support the progressive implementation of civil/military coordination.[22]

26 In addition, ANSPs are required to ensure the timely sharing of correct and consistent information covering all phases of flight, between civil and military parties.[23]

27 Aerodromes that are controlled and operated by the military, as well as ATM and ANS that are provided or made available by the military are exempt from the scope of the basic Regulation. Member States are responsible for military ATM and ANS to offers a level of safety and interoperability with civil systems that is as effective as those resulting from the application of the essential requirements for aerodromes and ATM/ANS in the Regulation (EASA Basic Regulation, article 2.5 and Annexes VII and VIII). Member States ensure this in various manners. Some develop corresponding military requirements, while some adopt civilian requirements in full or in part. Hence, some level of cost can be seen on the military side to adapt their systems to be interoperable with developments on the civilian systems.

3.2 General air traffic versus operational air traffic

28 The ICAO distinguishes between GAT and OAT to ensure appropriate regulations and procedures are followed. GAT refers mainly to all civil flights conducted for civil aviation business activities. It encompasses various activities, such as passenger and cargo flights, private aviation, recreational flying, flight training, aerial photography, and aerial surveying. GAT also includes military flights with mission parameters conform to the standard ICAO rules for civilian flights.

29 OAT encompasses mostly military aviation activities and flights directly related to military operations for which the GAT framework is not suited to provide the rules, regulations, and ATM support needed to fully ensure successful mission accomplishment. This includes military aircraft conducting exercises, training flights, reconnaissance missions, combat operations, air-to-air refuelling, and other military-specific tasks. OAT flights could also be performed by civil aircraft operators.

30 Rules for operating OAT flights are established at national level while harmonised at the maximum extent possible between Member States. Various

[22] EASA Basic Regulation, Annex VIII (section 3.2) and as required by CP1 (AF3).
[23] Basic Regulation, Annex VIII (Section 3.2) and common requirements Regulation (ATS.OR.115).

initiatives focus on an increased harmonisation of OAT rules (like EUROAT[24]) and the ability to better integrate OAT flights in order to complete the network picture e.g. in Air Traffic Flow and Capacity Management (ATFCM)[25], as provided by the ICAO Global Air Navigation Plan and implemented in the EU Network Strategy Plan and Network Operations Plan 2023-2027.

31 In certain Member States, the operations described as OAT above are referred to with a different name due to some local specificities. In order to reflect this, the PRB mainly refers to GAT and non-GAT flights, rather than GAT and OAT flights for the purpose of this report.

3.3 Existing organisation for the provision of en route ANS between civil and military

32 This section presents the allocation of the ANSPs to the three models, based on the NSAs replies to question 1 of the questionnaire.

33 There are three basic models of the civil-military cooperation in ANS covering services and/or systems with possible variations and overlaps influenced by the national and/or regional context: (i) Integrated, (ii) co-located, and (iii) separated ANS provisions. Although usually perceived as an evolutionary process with separated model at the bottom and integrated one on the top, its choice is a national strategic decision.[26] Figure 1 depicts current geographical distribution of organisational and service provision models as understood by the PRB from the NSA responses.

34 In some States, an integrated civil-military ANSP provides en route ANS to both GAT and OAT. In others, en route ANS to GAT and OAT are provided separately by the civil and the military from the same Area Control Centre (ACC) or each from its own ACC(s)/ATC unit(s). ATS in reserved airspace for the military use is predominantly provided by the military. The separation between non-participating GAT IFR flights and military flights operating in reserved airspace is often a shared responsibility based on the national civil-military coordination agreements.

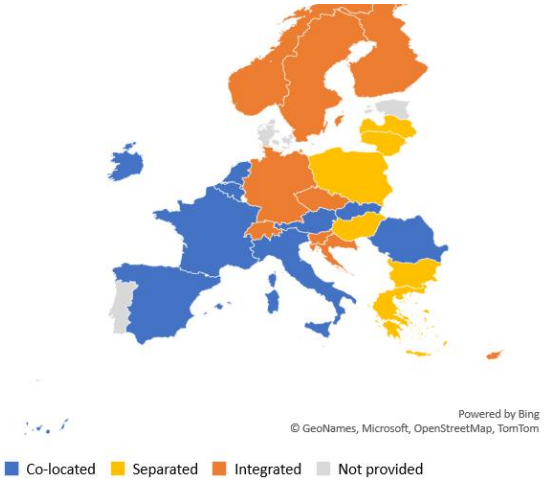

Figure 1 – Geographical distribution of civil military ANS provision organisation after PRB adjustments (source: PRB elaboration on the NSA responses. Note: MUAC not depicted).

35 Based on the NSAs replies to question 1 of the questionnaire, several NSAs did not identify their ANSPs in any of the models (Cyprus, Lithuania, and Malta). In other States, the choice of the model seems not being in line with the qualitative information provided by the NSAs, or with the information gathered through other sources (Czech Republic, Italy, and Ireland).[27] This may be due to the fact that the options provided in the questionnaire did not fully reflect their situations, which are more complex. For these States, the PRB allocated or re-allocated the ANSPs to the model it found the most appropriate to ensure consistency across the States. MUAC is presented in the "integrated civil-military ANSPs" model, although not applicable to Belgium's and Luxembourg's situations. The ANSPs concerned are marked with an asterisk in this section of the report, and the rationale for the allocation or re-allocation is provided in the Annex (Section 5.1).

36 The distribution after the PRB adjustments indicates that a large majority of ANSPs show a notable level of integrated civil-military cooperation, with 12 integrated and ten co-located with the military (Figure 2, next page).

[24] The following States have formally implemented the EUROAT and provided their country chapters: Austria, Belgium, Croatia, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, and the Netherlands.

[25] Currently the Flight Plan processing system (IFPS) used by the Network Manager (NM) does not process pure OAT flights.

[26] As an example, France, Italy, and Poland, being ranked as the top EU firepower countries with large air force and military air fleet size have each chosen a different strategy of the civil-military ATM integration (Source: eda.europa.eu/ and www.globalfirepower.com/).

[27] LSSIPs and ANSPs websites.

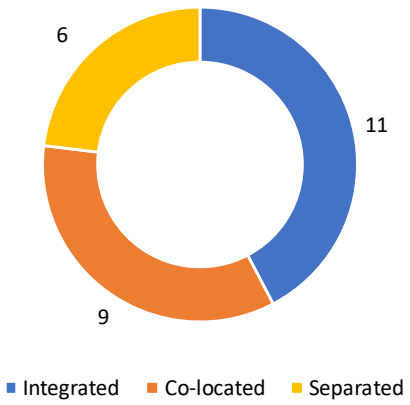

Figure 2 – Distribution of civil military ANS provision organisation after PRB adjustments (source: PRB elaboration on the NSA responses).

Integrated civil-military ANSPs

37 Integrated civil-military ANSPs provide primarily en route ANS to both GAT and OAT in whole or part of the airspace under the responsibility of one or more Member States (e.g. MUAC). There are various integration strategies seen Union-wide including ANSPs with the military personnel integrated in the ANSP's organisational structure (German Air Force Air Traffic Controllers (ATCOs) in DFS) and ANSPs providing ANS to both GAT and OAT (Skyguide for Switzerland).

38 In addition, there are Member States where national OAT-IFR flights are non-existing (or very marginal) and where the military has no controlling unit except to support tactical OAT flights. This is the case for Member States having limited air force or not performing extensive activities by other forces requiring airspace reservations (e.g.: Malta, Cyprus, and Slovenia). These Member States have established only civil ANSPs which are assumed to be capable to service military flights in individual cases. For the purpose of this study, these ANSPs are considered as being integrated as the capability to control flights only resides at the ANSP level.

39 11 ANSPs out of 26 are considered as integrated ANSPs for the purpose of this report (Table 1).

ANSP	Member State
DCA Cyprus*	Cyprus
Croatia Control	Croatia
Fintraffic ANS	Finland
ANS CR	Czech Republic
DFS	Germany
MATS*	Malta
MUAC*	For the Netherlands and Germany[28]
Avinor	Norway
Slovenia Control	Slovenia
LFV	Sweden
Skyguide	Switzerland

Table 1 – Integrated civil-military ANSPs (source: PRB elaboration on the questionnaire).

Co-located civil and military ANSPs

40 In this model, en route ANS are provided separately primarily by the civil ANSP for flights operating under GAT and primarily by the military for flights operating under OAT from the same ACC.

41 Nine ANSPs out of 26 are considered as being co-located with the military (Table 2).

ANSP	Member State
Austro Control*	Austria
Skeyes	Belgium-Luxembourg
DSNA	France
ENAV*	Italy
IAA*	Ireland
LVNL	Netherlands
ROMATSA	Romania
LPS	Slovakia
ENAIRE	Spain

Table 2 – Co-located civil ANSPs co-located with military ANSPs (source: PRB elaboration on the questionnaire).

Separated civil and military ANSPs

42 In this model, en route ANS are provided separately primarily by the civil ANSP for flights operating under GAT and primarily by the military for flights operating under OAT, each from its own ACC(s)/ATC unit(s).

43 The remaining six ANSPs out of 26 are considered separated from the military (Table 3, next page).

[28] For the report, the PRB presents MUAC in the "integrated civil-military ANSPs" model, although not applicable to Belgium's and Luxembourg's situations.

ANSP	Member State
BULATSA	Bulgaria
HASP	Greece
HungaroControl	Hungary
LGS	Latvia
ORO Navigacija*	Lithuania
PANSA	Poland

Table 3 – Separated civil and military ANSPs (source: PRB elaboration on the questionnaire).

3.4 Aerodromes controlled and operated by the military which are also used for GAT IFR flights

44 This section presents the list of aerodromes provided by the NSAs in reply to question 2 of the questionnaire (optional question), using the aerodromes ICAO 4-letter codes.

45 A total of 40 aerodromes controlled and operated by the military which are also used for GAT IFR flights were reported in 12 Member States (Table 4).

Member State	#	Aerodrome
Czech Republic	4	LKKB, LKPD, LKNA, LKCV
France	4	LFHT, LFRH, LFMI,
		LFOT (until 2021)
Germany	5	ETNL, ETSI, ETMN, ETNH, ETHN
Greece	6	LGBL, LGKL, LGPZ, LGRX, LGSA, LGSY
Italy	3	LICT, LIRP, LIRS
Lithuania	1	EYSA
Netherlands	2	EHEH, EHKD
Romania	3	LRCK, LRBC, LRTR
Slovakia	1	LZSL (until 2020)
Spain	6	LEBZ, LELN, LESA, LEVD, LEAB, LEZG
Sweden	2	ESDF, ESPA
Switzerland	3	LSMP, LSME, LSMD

Table 4 – Aerodromes controlled and operated by the military, which are also used for GAT IFR flights (source: PRB elaboration on the questionnaire).

3.5 Conclusions

46 According to the NSAs replies to the questionnaires, the participating Member States organise the civil and military ANS provision along three generic models for providing civil-military ANS services: Integrated, co-located, and separated.

47 In replying to the questionnaires, several NSAs did not identify their ANSPs in any of the models, others chose a model which seemed not in line with the qualitative information, or with information gathered through other sources. This may be due to the fact that the options provided in the questionnaire did not fully reflect their situations, which are more complex. For these States, the PRB allocated or re-allocated the ANSPs to the model it found the most appropriate to ensure consistency across the States.

48 The distribution after the PRB adjustments described above indicates that a large majority of ANSPs shows a notable level of cooperation, with 11 integrated and nine, co-located with the military.

4 ANS COSTS FOR RESOURCES USED FOR BOTH CIVIL AND MILITARY AIRSPACE USERS

49 This section refers to Part II of the questionnaire. It aims at gathering a better understanding of the type of services that are provided by:

- The civil ANSP to the military (for non-GAT IFR traffic);29 and how it is ensured that the costs incurred for these services are not borne by the GAT users under the SES charging scheme; and
- The military to GAT users; and their impact on the costs charged to GAT users under the charging scheme, with a focus on en route charges.

4.1 Regulatory requirements

50 The SES performance and charging Regulation applies to the provision of ANS for general air traffic in the SES Member States by certified civil air navigation service providers and if the State so decides, by military ANSPs under certain conditions.[30]

51 The costs for the services provided to en route GAT are charged to airspace users.[31] The costs eligible for route charges are the costs incurred for the services provided to GAT within the en route charging zone by the ANSPs and may also include costs incurred by the Member State in relation to the provision of ANS (e.g. for Search And Rescue (SAR) services provided by the Ministry of Defence or any other governmental entity).

52 This implies that the costs incurred by the military for the provision of en route services to GAT can be included in the cost base charged to airspace users, while the costs incurred for the provision of services to non-GAT (whether provided by military or civilian entities) must be excluded from the cost base charged to users for the en route charging zone(s).[32]

53 The proportions of cost attributable to civil aviation and to others should be determined in an equitable manner, such that no users are burdened with costs not properly allocable to them according to sound accounting principles.[33] For this, both the determined and actual costs must be allocated in a transparent way to the charging zone(s) concerned.[34]

54 Member States shall establish the cost bases and unit rates for each charging zone in a transparent manner and the NSAs shall verify, in respect of each charging zone, that the cost bases comply with the SES requirements.[35]

4.2 ANS infrastructure and services provided or made available by the civil ANSPs to non-GAT military flights

55 The types of services and infrastructure provided or made available by the civil ANSPs to non-GAT military flights depend on the existing organisation for the provision of en route ANS in place between the civil and the military service providers. This section presents, for each of three models as presented in the previous section, the services reported to be provided by the civil ANSP and the equipment made available by these ANSPs to military non-GAT flights (questions 3 and 4 of the questionnaire).[36] This section also examines the NSA replies to question 6 of the questionnaire relating to the financing of these costs for each civil ANSP (or integrated civil-military ANSP), and how NSA ensures that these amounts are excluded from the cost bases charged to GAT airspace users.

56 The PRB analysis of the individual NSA replies to questions 3, 4, and 6 of the questionnaire is provided in the Annex (Section 5.2) and summarised in this section. Replies to question 5 of the questionnaire relating to the number of non-GAT flights serviced by the ANSPs are not presented due to the potential confidentiality of the data.

[29] Or the integrated civil-military ANSP.
[30] Article 1(2) and 1(5)(b) of the performance and charging Regulation.
[31] Terminal ANS as well, under certain conditions.
[32] Throughout the report, the military refers to the military in his role of service provider or airspace user primarily involved in OAT activities.
[33] Doc 9082 ICAO's Policies on Charges for Airports and Air Navigation Services, section III, para. 5.
[34] Articles 22(5) and 23 of the performance and charging Regulation.
[35] Articles 22, 22(7), and 30 of the performance and charging Regulation.
[36] or the integrated civil-military ANSP.

Services and infrastructure provided by integrated civil-military ANSPs

57 In general, integrated ANSPs report to provide ATS, CNS[37], MET[38] services to military non-GAT flights, as well as, for some of them, SAR and other ANS such as AIS/AIM[39] (Table 5). They also own a large part of the equipment used by both civil and military users (Table 6).

	Services					
ANSP	ATS	CNS	MET	SAR	Other ANS	
DCA Cyprus						
Croatia Control	×	×	×		×	AIS/AIM
ANS CR	×	×		×	×	AIP
Fintraffic ANS	×	×	×	×	×	AIS
DFS	×	×				
MATS						
MUAC	×					
Avinor	×	×	×	×		
Slovenia Control	×	×	×		×	AIS
LFV	×	×	×		×	AIM
Skyguide	x	x	x			

Table 5 – ANS provided by integrated ANSPs to non-GAT military flights (source: PRB elaboration on the questionnaire).

	Equipment						
ANSP	Building(s)	ATC system	Radars	VOR/DMEs	DMEs	Other equipment	
DCA Cyprus							
Croatia Control				×	×		
ANS CR	×	×	×	×	×		
Fintraffic ANS	×	×	×	×	×	×	AIS
DFS	×	×	×	×	×	×	TACAN
MATS							
MUAC	×	×					
Avinor	×	×	×	×	×	×	FPL
Slovenia Control	×	×	×	×	×	×	
LFV	×	×	×	×	×		
Skyguide		x	x			x	Various

Table 6 – Equipment made available by integrated ANSPs to non-GAT flights (source: PRB elaboration on the questionnaire).

58 DFS, MUAC, Skyguide, and LFV have agreements in place for the financing of these services and infrastructure by the military and the costs for the related services are excluded from their en route cost bases.

59 ANS CR has an agreement in place for the financing of these services and infrastructure by the military. The related annual amounts will be deducted from the en route cost base from 2022 onwards, as from then on, the related services are provided by the ACC instead of the regional airports.

60 Croatia Control, Fintraffic ANS, and Avinor do not have financing agreements in place and do not deduct the costs for the related services from their en route cost bases. For Croatia Control, the explanation provided is that the marginal cost for providing ANS to non-GAT military flights is insignificant. For Fintraffic ANS, the rationale provided is that "it is very rare to provide such service in SES-regulated charging zones and this has a marginal effect on the cost base". For Avinor, the costs for the services to the military which were previously financed outside the cost base are now,

[37] Communication, Navigation, Surveillance.
[38] Meteorology.
[39] Aeronautical Information Services/Aeronautical Information Management.

since 2020, part of the en route cost base and represent around 3.3M€ per year.

61 As far as DCA Cyprus, MATS, and Slovenia Control are concerned, the PRB understands that these civil ANSPs are the only ANSPs in their respective airspaces responsible for providing ANS to GAT and non-GAT, but that there is *de facto* no GAT IFR traffic as the controlled IFR military flights are all flying under GAT. Hence no costs are associated to the provision of such services.

Services and infrastructure provided by civil ANSPs co-located with the military

62 In terms of services, co-located ANSPs are generally separated in terms of ANS (Table 7), but share common infrastructure and equipment, including the ATC system (Table 8).

	Services					
ANSP	ATS	CNS	MET	SAR	Other ANS	
Austro Control						
Skeyes						
DSNA						
ENAV						
IAA	x	x	x	x	x	FPD, ASM
LVNL	×					
ROMATSA		×				
LPS	×	×	×	×	×	AIP
ENAIRE		×				

Table 7 – ANS provided to non-GAT military flights by civil ANSPs co-located with the military (source: PRB elaboration on the questionnaire).

	Equipment						
ANSP	Building(s)	ATC system	Radars	VOR/DMEs	DMEs	Other equipment	
Austro Control	×	×					
Skeyes	x		×			x	Monique, CADAS
DSNA	×	×	×			×	COM
ENAV							
IAA	x	x	x	x	x		
LVNL		×					
ROMATSA	×	×	×	×	×	×	ILS
LPS	×	×	×	×	×	×	COM
ENAIRE	×	×	×	×	×		

Table 8 – Equipment made available to non-GAT flights by civil ANSPs co-located with the military (source: PRB elaboration on the questionnaire).

63 Austro Control, skeyes, DSNA, and LVNL have agreements in place for the financing of services and infrastructure by the military and the costs for the related services are excluded from their en route cost bases.

64 IAA[40], ROMATSA, and ENAIRE do not have financing agreements in place and do not deduct the costs for the related services from their en route cost bases. For IAA, the NSA clarified that "cooperative non-GAT Military flights are restricted to designated military areas where military ANS provides the service". For ROMATSA, "there are no direct costs for ANS provided by civil ANSP to non-GAT IFR military flights as there is only a common use of infrastructure, which also applies in reciprocity with military infrastructure used also for civil ANS". For ENAIRE, the PRB understands that the costs for CNS and equipment made available to military non-GAT flights are neither quantified nor deducted from the cost bases for air navigation services under the SES.

65 As far as LPS is concerned, the PRB understands no military non-GAT flights are controlled by LPS and hence no costs are associated to the provision of such services.

66 The Italian NSA has not reported any ANS or equipment made available by ENAV to the

[40] Now AirNav.

military. Due to the co-location of some ATS units, the PRB would have however expected to see common infrastructure and equipment reported, as well as information on their financing. However, the Italian NSA clarified that "ENAV does not make available any ANS or equipment to the military. ATS units in the airport or approach canters are managed by ENAV or ITAF. By law, at "area control" unit ENAV and ITAF share the same operational room and use the same software and hardware to better guarantee coordination, but any organization buy all the equipment and provide longlife logistic support by their own budget".

Services and infrastructure provided by separated civil and military ANSPs

67 In terms of services, separated ANSPs only report exchange of data and MET (Table 9), and in some cases share common infrastructure and equipment, but not the ATC system (Table 10).

	Services					
ANSP	ATS	CNS	MET	SAR	Other ANS	
BULATSA	×	×	×		×	AIS
HASP						
HungaroControl		×				
LGS						
ORO Navigacija		×		×		
PANSA	×	×		×		

Table 9 – ANS provided by separated civil and military ANSPs to non-GAT military flights (source: PRB elaboration on the questionnaire).

	Equipment						
ANSP	Building(s)	ATC system	Radars	VOR/DMEs	DMEs	Other equipment	
BULATSA	×	×	×	×	×	×	Various
HASP							
HungaroControl			×	×			
LGS							
ORO Navigacija				x	x	x	Radio coverage
PANSA		x				x	COM

Table 10 – Equipment made available by separated ANSPs to non-GAT flights (source: PRB elaboration on the questionnaire).

68 BULATSA, HASP, HungaroControl, LGS, OroNavigacija and PANSA do not report financing agreements in place and do not deduct costs for the related services from their en route cost bases.

69 The justifications provided for BULATSA is that "BULATSA does not bear any additional costs related to non-GAT IFR military flights (zero marginal costs)" and "all costs are aimed at the provision of ANS of GAT traffic".

70 For PANSA, the justification given is that "certain elements of infrastructure or systems are made available to positions handling OAT traffic to "support the integration and to minimise possible negative impact of military (OAT) traffic on airspace availability for civil airspace users" and, for some components, the two sides, PANSA and the military, independently finance the resources provided by each of them and the part related to the resources provided by the military is not financed under the performance and charging scheme".

71 For the other ANSPs, the PRB understands that no or very limited military non-GAT flights are serviced by these ANSPs and hence no costs are reported to be associated to the provision of such services or equipment.

4.3 *ANS infrastructure and services provided or made available by the military to GAT flights*

72 This section presents the services reported to be provided by the military to en route GAT IFR flights in question 7 of the questionnaire and the equipment made available by the military to such flights as per question 8 of the questionnaire. This section also examines the costs for ANS provided by the military to GAT flights that are included in the en route cost bases of the SES Member States (questions 10-11 of the questionnaire).

73 The PRB analysis of the individual NSA replies to questions 7, 8, 10 and 11 of the questionnaire is provided in the Annex (Section 5.2) and summarised in this section.

74 Finally, the section presents the answers to optional question 9 of the questionnaire relating to the types of services and infrastructure provided by the military to GAT flights at the military aerodromes/airfields (as reported in question 2 of the questionnaire).

En route

75 The types of services and infrastructure provided or made available by the military to en route GAT flights are summarised in Table 11, which also indicates if all or part of the costs relating to these services and infrastructure are included in the en route cost bases of the States concerned. Items marked in bold characters were not reported by the NSAs and are based on the PRB understanding.

	Services					Equipment						
	ATS	CNS	MET	SAR	Other ANS	Building(s)	ATC system	Radars	VOR/DMEs	DMEs	Other equip-	En route cost
Belgium				X	X	X	X	X			X	Y
Bulgaria						X						
Czech Republic	X	X	X									
France	X			X		X	X		X	X		Y
Germany		X	X	X				X		X	X	
Greece			X	X								**Y**
Hungary		X		**X**				X				**Y**
Ireland									X			
Italy	X	X	X	X	X		X	X	X	X		Y
Lithuania		X							X			
Malta				X								
MUAC								X				
Netherlands	X	X	X					X		X		
Norway				X								
Poland				X								
Romania								X				
Slovakia				X								
Slovenia		X										
Spain	X	X		X			X	X			X	Y
Sweden		X	X			X	X				X	Y
Total	**5**	**9**	**6**	**11**	**2**	**4**	**5**	**8**	**4**	**4**	**3**	**7**

Table 11 – En route ANS provided by the military ANSPs to GAT flights (source: PRB elaboration on the questionnaire and the en route reporting tables).

76 Overall, in the SES area, the most common services provided by the military to GAT flights are SAR, CNS, and MET.

77 In five States (Czech Republic, France, Italy, the Netherlands, and Spain), the NSAs also reported ATS provided by the military to en route GAT flights. The PRB understands that such ATS are related to traffic to and from aerodromes controlled and operated by the military (see Section 3.4). The PRB understands that these services have been reported for en route in so far as a part of these services provided in approach are allocated to en route on the basis of the methodologies applied by the States to allocate the costs between en route and terminal services. For Spain, the Spanish NSA clarified that the "military ANSP provides en route and approach service in Zaragoza TMA, and approach service for traffics in and out LEMI (Murcia Internacional). These services are reported only for en route. In accordance with ESPP3, no military services are reported in TNC".

Costs for ANS provided by the military included in the en route cost bases

78 Overall, eight Member States include costs for services provided by the military to GAT in their en route cost bases, representing on average 4% of their total actual en route costs in 2021 corresponding to 2% of the total actual en route costs at Union-wide level) (Table 12).[41]

Member State	Actual costs (M€)			% of actual costs		
	2019	2020	2021	2019	2020	2021
Belgium	0	1	1		0.05%	0.1%
Italy	50	47	48	8%	8%	8%
Spain	37	35	40	5%	5%	6%
France	12	9	12	1%	1%	1%
Hungary	2	2	2	2%	2%	2%
Greece	8	20	19	6%	16%	14%
Portugal	5	6	6	4%	5%	5%
Sweden	1	1	1	0.3%	0.2%	0.3%
8 States	**114**	**119**	**128**	**3%**	**3%**	**4%**
Union-wide	**114**	**119**	**128**	**2%**	**2%**	**2%**

Table 12 – Costs for ANS provided by the military to GAT flights included in the en route cost bases (source: PRB elaboration on the questionnaire and on the en route reporting tables).

79 The military costs included in Belgium-Luxembourg's en route charging zone correspond to the costs of MET equipment used by skeyes and represent 0.1% of Belgium-Luxembourg en route actual costs in 2021. SAR costs are not included in the en route cost base.

80 The military costs included in Italy's en route cost base are those of ITAF, representing 8% of the en route actual costs in 2021.[42] The PRB understands that ITAF provides MET services in the entire en route charging zone (MET costs account for half of the ITAF costs reported for the en route cost base), however, the geographical scope for the

[41] Including Portugal which has not responded to the questionnaire.
[42] ITAF - the Italian Air Force.

ATM/CNS costs is unclear and not provided in the RP3 performance plan or in the additional information to the reporting tables. The PRB assumes that the geographical scope is related to the airspace around military aerodromes used also for GAT flight and that a portion of the related approach costs is allocated to the en route charging zone.

81 The military costs included in Spain's cost bases (Continental and Canarias) are those of the Spanish Airforce - EA, representing 6% of the en route actual costs in 2021.[43] The PRB understands that SAR costs in the en route charging zones of Spain are entirely provided by ANSP-EA (they account for around 45% of the EA-ANSP costs reported for the en route cost bases). The Spanish NSA clarified that regarding ATM services, the "military ANSP provides en route and approach service in Zaragoza TMA, and approach service for traffics in and out LEMI (Murcia Internacional)" and "CNS services are provided in the entire airspace under the responsibility of Spain (Spain Continental and Spain Canarias)".

82 The military costs included in France's en route cost base correspond to ATS service around four airports and ATC in some limited en route areas, including buildings and equipment. They account for 1% of France's en route actual costs in 2021. The French NSA clarified that SAR costs relating to services provided by the military are not included in the en route cost base.

83 The military costs included in Hungary's en route cost base relate to SAR and represent 2% of Hungary's en route actual costs in 2021.[44]

84 The military costs included in Greece's en route cost base relate to SAR and MET and represent 14% of Greece's en route actual costs in 2021.[45]

85 The military costs included in Portugal's en route cost base relate to SAR and represent 5% of Portugal Lisboa's en route actual costs in 2021.[46]

86 The military costs included in Sweden's en route cost base correspond to the costs of the communications network used by LFV and represent 0.3% of Sweden's en route actual costs in 2021.

87 The other States have not reported any costs for services or equipment provided by the military and included in their en route cost bases. The PRB notes that in some instances, the services and equipment are provided on a reciprocity basis and compensated by the services provided by the civil ANSPs to non-GAT flights (para 64).

Aerodromes/airfields controlled and operated by the military which are also used to a significant extent for civilian GAT IFR flights

88 The types of services and infrastructure provided by the military to GAT flights at the military aerodromes/airfields (as reported in question 2 of the questionnaire, see Section 3.4) are presented in Table 13 (next page).

4.4 Conclusions

89 The types of services and infrastructure provided or made available by the civil ANSPs to non-GAT military flights depend on the existing organisation for the provision of en route ANS in place between the civil and the military service providers, integrated, co-located, or separated.

90 The costs relating to these services and equipment must be identified and excluded from the cost base charged to users.

- DFS, MUAC, Skyguide, LFV, Austro Control, DSNA, LVNL and skeyes have agreements in place for the financing of these services and infrastructure by the military and are deducting these from their en route cost bases.
- Avinor seems to include significant amounts relating to ANS to OAT flights in the cost base, which would not be compliant with the SES regulations.
- For the remaining ANSPs, the NSAs report no agreements in place for the financing of these services and infrastructure by the military and justify not deducting any amounts from the en route cost bases on the grounds that the ANSPs incur no or low additional costs to provide services to non-GAT military flights and on the grounds that these services and infrastructure are provided to minimise possible negative

[43] EA - Ejército del Aire, the Spanish Air Force.
[44] The analysis of SAR and MET costs are the subject of an upcoming PRB report.
[45] Idem.
[46] Idem.

impact of non-GAT military traffic on airspace availability for GAT airspace users.

91 The types of services and infrastructure provided or made available by the military to GAT flights concern SAR, CNS, MET, and approach ANS around military aerodromes used by GAT IFR flights. Part of these approach costs are allocated by the ANSPs to the en route activity for charging purposes:

- Eight States (Belgium, Italy, Spain, France, Hungary, Greece, Portugal, and Sweden) include costs for services provided by the military to GAT in their en route cost bases, representing in total 2% of the actual en route costs at Union-wide level in 2021.
- The other States have not reported any military costs in their en route cost bases, in some instances, compensating for services or equipment provided by the civil ANSPs to non-GAT flights.

92 Overall, the PRB can conclude that the magnitude of the impact of shared civil-military resources on the en route cost bases is limited at Union-wide level. At local level, the impact is more significant in some Member States. In such cases, the information provided by the NSAs would need to be better detailed in the appropriate sections of the performance plans and in the monitoring reports for the sake of transparency. That way compliance with the performance and charging Regulation should be verified and ensured.

Member State	Aerodrome
Czech Republic	APP/TWR at LKPD, LKKB, LKCV, LKNA.
France	ATS (APP / TWR) and CNS (Radio communication and ILS where available) using the equipment already procured for non-GAT traffic
Germany	Full range of ATS and aerodrome services according to ICAO category
Greece	In the aerodromes controlled by the Ministry of Defence (HAF), approach and aerodrome ATS and relevant infrastructure are made available to civilian GAT IFR flights.
Italy	ATS, CNS, MET and SAR.
Lithuania	At Šiauliai airport: CNS – NAV (ILS, DVOR, DME signal provision in space), Radio Communication facilities and ATC equipment; MET – AMS and products of other MET services available at self-briefing (AMO, MWO, WAFS, VAAC, WAFC, TCAC).
Netherlands	ATS, MET, CNS, Radar
Romania	No services or infrastructure provided by the military for GAT IFR flights. At indicated aerodromes civil and military only use the same runway and taxiways
Slovakia	Certified Military ANS provider at Sliač airport providing services to GAT and OAT has terminated the provision of services since 31.12.2020. Nowadays only OAT traffic is accepted.
Spain	Mil ANSP provides en-route and approach service in Zaragoza TMA, and approach service for traffics in and out LEMI (Murcia Internacional)
Sweden	At both military and combined civil/military airports the military provide all equipment besides radar for ATS purposes.
Switzerland	All usual aerodrome services (ATS, CNS, RFF, MET, RWY clearing, etc.), except specific ground handling for civil traffic (e.g. towing tractors, etc.)

Table 13 – ANS and infrastructure provided by the military ANSPs to GAT flights in military aerodromes/airfields (source: PRB elaboration on the questionnaire and on the en route reporting tables).

5 ANS COSTS FOR IMPLEMENTATION AND OPERATION OF FUA

93 This section 5 refers to Part III of the questionnaire and aims at evaluating the magnitude of the costs relating to FUA implementation and operations, what these costs include and how they are financed.

94 Flexible use of airspace is the ICAO airspace management concept introduced by the SES Framework aiming at maximising the use of the airspace and ensuring all stakeholders' airspace requirements while maintaining required safety levels. It is ensured by dynamically adapting restrictions on some airspace structure. Traditionally, airspace was divided into fixed areas for exclusive use, which could lead to inefficiencies and congestions. With FUA, the airspace is considered as a continuum, replacing some fixed structures for flexibly manageable variants, adjustable in time, size and location allowing more dynamic air traffic management, ATM capacity and workload distribution.

95 The concept defines three organisational and procedural levels based on collaborative decision-making and joint civil-military process including:

- ASM level 1 for strategic long-term planning on airspace design and rules setting;
- ASM level 2 for pre-tactical short-term airspace planning, allocation, and airspace requests management; and
- ASM level 3 for tactical, real-time daily airspace allocation and use in line with valid AUP/UUP.

96 FUA is considered one of the main enablers for airspace optimisation based on safe and effective cooperation between civil and military.

97 The airspace reservations are kept to necessary minimum and released for other airspace users once no longer needed.

98 Various ASM support systems, either centralised or local, are implemented to enable the civil-military coordination process and the stakeholders' tasks. Several Union-wide technical systems enabling civil-military coordination and monitoring have been made available to the Member States to perform the ASM tasks' execution and evaluation. The tools include LARA, PRISMILCURA, NMIR and CIMACT systems. Some Member States use their local solutions built on technical specifications developed by Eurocontrol (Figure 3).

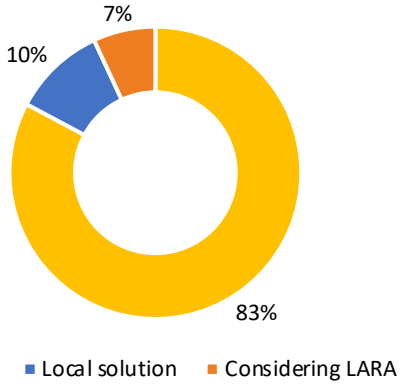

Figure 3 – ASM system in use (source: PRB elaboration on LSSIP data and LARA website, Eurocontrol). [47]

5.1 Regulatory requirements

99 The FUA concept has been adopted by the SES regulatory framework and introduced through Commission Regulation (EC) No 2150/2005. While encouraging regional and cross-border cooperation in FUA application, the Regulation imposes implementing requirements and governance on the national level. ASM level 1 responsibilities are allocated to the State including availability of procedures for ASM levels 2 and 3, airspace structures and system support allowing real-time information exchange. ASM levels 2 and 3 are performed respectively by Airspace Management Cells (AMC) and Air Traffic Services under cooperation of civil and military stakeholders.

100 Traffic volumes trends and ATM capacity issues experienced over past years necessitated the introduction of network-level solutions including network-centric A-FUA and coordinating role of the Network Manager. A-FUA has become an integral part of ATM Master plan/SESAR and associated common projects introduced by the PCP and CP1 regulations.

101 The CP1 Regulation identifies Advanced-FUA in one ATM functionality (AF3) of the CP1 to be

[47] LARA web (https://www.lara-eu.org/index.php?page=asm-2-asm).

implemented by 31 December 2022.[48] Common projects represent mandatory investments by all ATM stakeholders. The related investments can be included in the Member States' cost bases and are eligible for Union funding. However, these funds have to be reimbursed to airspace users in future unit rates.

5.2 Actual costs for the implementation and operation of FUA

102 Implementing FUA requires investments into organisational infrastructure arrangements and supporting technical systems, as well as the resources to cover the operating costs. The FUA Regulation establishes the general implementing responsibility to the Member State but does not allocate direct responsibility for the cost recovery. Those costs are considered FUA costs.

103 The military requires that training zones are established at a reasonable distance of the air bases or at locations adequately simulating the real environment the military personnel are daily training for. For the sake of economy and training efficiency, the flights are usually routed directly from the air base to the training area under military or civil coordination and controlled following OAT rules. Any costs associated with those ATS are not considered FUA costs, but costs for services provided by a given ANSP to non-GAT flights (as covered by section 4.2).

5.3 Means of financing of costs for the implementation and operation of FUA

104 Neither the airspace nor FUA Regulations prescribe how to finance the FUA organisational arrangements and the supporting systems. The arrangements however have to follow appropriate provisions of the performance and charging Regulation. Depending on the institutional civil-military arrangements of ANS service provisions (analysed in Section 3), the FUA costs could be covered by:

- The Member States (national budget);
- Route charges – fully, especially in case of integrated services; and
- Route charges – partly, in proportion of sharing costs and use between civil and military stakeholders.

105 The answers from the NSAs to question 12 of the questionnaire on the financing of en route costs incurred in respect of FUA for years 2019 to 2021 are detailed in the Annex and summarised in the following paragraphs.

106 Out of the 25 responding States: Four did not provide the information or confused FUA costs with costs provided by the civil ANSP to non-GAT flights, three reported that FUA costs are fully borne by the State, six indicated that these are fully financed by en route charges, nine partly by the State and partly by en route charges, and the remaining three States have no FUA needs and therefore related costs (Table 14).

Financing the FUA costs by:	Member States
State (budget)	Cyprus, Greece, Slovakia
Fully by en route charges	Czech Republic, Finland, the Netherlands, Norway, Romania Switzerland
En route charges (civilian part) and budget (military part)	Belgium, Bulgaria, Croatia, France, Germany, Latvia, Poland, Spain, Sweden
No info or understanding of FUA mixed with OAT	Austria, Hungary, Ireland, Italy
Not applicable (low traffic or no FUA)	Lithuania, Malta, Slovenia

Table 14 – FUA financing models elaborated from the NSAs' responses (source: PRB elaboration on the questionnaire).

5.4 Conclusions

107 The replies to the questionnaires have not provided clear answers from all Member States regarding the FUA implementing and operating costs. Many States have implemented FUA and supporting technical systems implementation before 2019, with the consequence that the actual costs related to the ASM level operations and systems maintenance are reported low or near to zero. The questionnaires' analysis has been impacted by the fact that some Member States do not register FUA costs separately from other costs for ANS service provision.

108 Some Member States seem to confuse the FUA costs with costs incurred by ANSP for the provision

[48] Annex I, item 3.

of ANS to non-GAT flights or with costs for exempted flights.

109 Costs for FUA implementation and operations incurred by the civil ANSPs are difficult to identify separately from the ANSPs accounts but are reported to have only a limited impact on the ANSPs en route cost base.

110 Based on the provided information, the majority of the Member States include FUA costs into their ANSP's cost base.

6 ANS COSTS FOR SERVICES PROVIDED TO EXEMPTED MILITARY GAT IFR FLIGHTS

111 This section refers to Part IV of the questionnaire and aims at increasing transparency on the costs incurred for ANS provided to exempted military GAT flights and their financing.

6.1 Regulatory requirements

112 According to the performance and charging Regulation, the Member States must define which categories of flights are exempted from the air navigation charges in their en route and terminal charging zones covered by the Regulation.[49] Among these exemptions could be "military flights performed by aircraft of a Member State or any third country".[50]

113 The Regulation also specifies that "Member States shall cover the costs for the services that air navigation service providers have provided to flights exempted from en route charges or terminal charges".[51]

114 This provision has its roots in the service provision Regulation which stipulates that: "when imposing charges on different airspace users for the use of the same service, no distinction shall be made in relation to the nationality or category of the user" and that the "exemption of certain users may be permitted, provided that the cost of such exemption is not passed on to other users"[52].

115 Although the performance and charging Regulation does not specifically address the NSA costs for exempted IFR flights, the PRB understands that these costs would also need to be covered by the States to ensure that they are not passed onto the other users.[53]

116 The performance and charging Regulation specifies that the determined costs of exempted IFR flights should be calculated as the product of the determined costs incurred for IFR flights and the ratio of the number of exempted service units to the total number of service units and that the same rule applies for the actual costs of exempted IFR flights.[54] By extension, the determined and actual costs of exempted military flights should be calculated as the product of the costs incurred for military IFR flights and the ratio of the number of military exempted service units to the total number of service units.

117 In accordance with Article 24 of the performance and charging Regulation, "Member States shall establish cost bases for charges for each charging zone in a transparent manner". Member States need to consult stakeholders on their intended determined costs when establishing their performance plans and after each year on the actual costs incurred. To support these processes, the States shall provide reporting tables and additional information defined in the Regulation. In respect of exempted flights, the States are requested to provide the "description of the policy on exemptions and description of the financing means to cover the related costs".[55] However, neither the performance plans nor the reporting tables have a specific place defined to report details of the determined and actual costs relating to exempted IFR flights.

6.2 Policy on exemptions of military GAT IFR flights for the en route charging zones

118 The information collected through the additional information to the reporting tables on the description of the exemptions policy is insufficiently complete and clear in many Member States and does not specifically reflect the military exemptions.

119 The PRB questionnaire included question 13, asking the NSAs to describe the policy of exemption of military flights in their respective State (for en route charges). The replies received on this question by the NSAs are in some instances still not very precise. This may be due to the potential confidentiality and political aspects of such information for some Member States. The lack of precise answers to this question does not however

[49] Article 31(3), 31(4) and 31(5) of the performance and charging Regulation.
[50] Article 31(4)(a) of the performance and charging Regulation for en route and 31(5) for terminal.
[51] Article 31(6) of the performance and charging Regulation.
[52] Articles 15 (3)(a) and (b) of the performance and charging Regulation.
[53] Including Eurocontrol costs.
[54] Articles 22 (6)(b) and 23 of the performance and charging Regulation.
[55] Annex IX item 4 (b) of the performance and charging Regulation.

impair the PRB analysis as the question was more intended to set the scene.

120 Nevertheless, the replies indicate that some Member States exempt all military flights from any country, while most States exempt the military flights of their own country and those subject to reciprocity agreements with the counterpart country.

6.3 Service units relating to exempted en route military flights

121 The actual number of service units (SUs) relating to en route military flights exempted from route charges in each en route charging zone is published annually in the CRCO Reports on the Operation of the Route Charges System.[56]

122 Overall, in the SES area, the number of SUs relating to exempted flights typically account for 1% of the total SUs and most of them relate to exempted military flights (Table 15). This was the case in 2018 and 2019, when the proportion of SUs for military exempted flights was below 1% for 24 charging zones out of 29, between 1% and 2% for four charging zones and above 2% for one charging zone (Malta). During COVID-19 years, the proportion of SUs for military exempted flights increased, and for most charging zones, the proportion was above 1%, because the military exempted SUs did not decrease when the chargeable service units plummeted (Figure 4). In 2022, although the SUs for military exempted flights increased significantly in a number of States mainly due to increased military activity (in particular in Poland, Estonia, Lithuania, Latvia, Germany, Denmark, and Sweden) triggered by the Russian aggression on Ukraine, the proportion of military exempted SUs returned to below 1% for most charging zones and was 1% for the SES area overall. All the detailed values are reported in the Annex.

	2018	2019	2020	2021	2022
Exempted SUs/total SUs	0.8%	0.8%	1.8%	1.5%	1.0%
Military exempted SUs/total SU	0.7%	0.7%	1.5%	1.3%	0.8%
Military exempted SUs/exempted SUs	84%	84%	87%	85%	83%

Table 15 – Actual total and exempted services unit in the SES area (source: PRB elaboration on CRCO Reports on the Operation of the Route Charges System in 2018, 2019, 2020, 2021, and 2022).

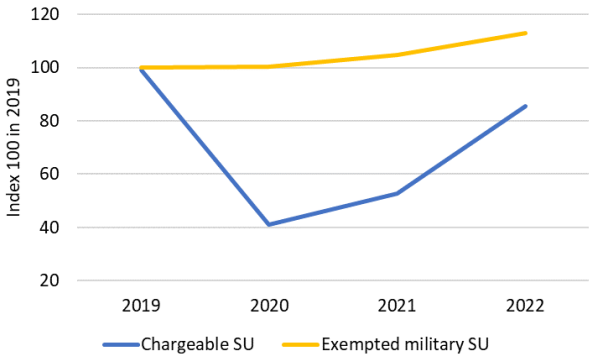

Figure 4 – Evolution of actual chargeable and exempted service units between 2019 and 2022 (source: PRB elaboration on CRCO Reports on the Operation of the Route Charges System in 2019, 2020, 2021 and 2022).

6.4 Costs for services provided to en route exempted GAT IFR military flights

123 The NSAs were asked in question 14 of the questionnaire to provide the determined and actual costs for the services provided to military flights exempted from en route air navigation charges, in respect of years 2019 to 2021. Then, in question 15, they were requested to provide the amounts financed in respect of exempted military GAT IFR flights for years 2019 to 2021 and to explain how these are financed.

124 For the determined costs relating to military flights exempted from en route air navigation charges, many NSAs did not provide the data, explaining that such costs were not specifically calculated for the purpose of the performance plans.

[56] https://www.eurocontrol.int.

The en route actual costs for the services provided to exempted military flights (as reported in question 14) are presented in the Annex.

125 As far as the amounts financed in respect of exempted flights are concerned (as reported in question 15), data was provided for only 17 States out of the 25 responding States (Table 16, next page). Croatia, Cyprus, Greece, Latvia, Malta, the Netherlands, and Switzerland did not provide amounts financed in respect of exempted flights in question 15.

126 The PRB analysis indicates that the responding States are using different methodologies to compute these amounts. The two main methodologies applied by the States are referred to below as Formulas 1 and 2:

- Formula 1 (Table 5): Based on the product of the costs incurred for military IFR flights and the ratio of the number of military exempted service units to the total number of service units, as laid down in the performance and charging Regulation57 (para 116).

$$\text{DC of exempted military flights} = \text{DC for IFR flights} \times \frac{\text{forecast SUs for exempted military flights}}{\text{forecast TSUs}}$$

$$\text{AC of exempted military flights} = \text{AC for IFR flights} \times \frac{\text{actual SUs for exempted military flights}}{\text{actual TSUs}}$$

Figure 5 – Formula for the calculation of costs of exempted military flights derived from Articles 22 (6)(b) and 23 of the performance and charging Regulation.

- Formula 2 (Table 6): Based on the actual number of service units for exempted military flights multiplied by the unit rate charged to chargeable airspace users.

$$\text{Amounts covered by the State in respect of exempted military flights} = \text{Applied unit rate} \times \text{actual SUs for exempted GAT IFR military flights}$$

Figure 6 – Formula for the calculation of costs of exempted military flights based on the unit rate.

127 The results show that, out of the 17 Member States for which amounts are reported in question 15 (Table 16):

- Four Member States report amounts calculated on the basis of Formula 1. Belgium based on the determined costs; Bulgaria based on the determined costs of the ANSP; France and Hungary based on the actual costs. For France, based on 70% of the actual costs of the en route charging zone.
- Twelve States report amounts calculated on the basis of Formula 2. Austria, Czech Republic, Finland, Italy, Lithuania, Poland, Romania, Slovenia, and Spain on the unit rates for their entire respective en route charging zone; Germany, Slovakia and Sweden on the part of the unit rates relating to the main ANSP for their respective en route charging zone.
- For the remaining State, Norway, the amounts reported do not correspond to either the PRB computations of Formulas 1 or 2.

State	Amounts financed in respect of exempted military flights (in '000) Question 15			Formula applied
	2019	2020	2021	
Austria	464	342	411	F2
Belgium	797	2,032	2,087	F1, DC
Bulgaria	1,650	3,315	2,941	F1, DC ANSP
Czech Republic	36,172	42,844	43,723	F2
Finland	49	23	35	F2
France	5,685	14,352	11,529	F1, 70%
Germany	1,745	1,770	1,837	F2, DFS
Hungary	299,494	238,488	247,785	F1, adjusted
Italy	9,588	7,599	7,715	F2
Lithuania	144	147	165	F2
Norway	32,272	0	0	?
Poland	5,825	7,165	7,607	F2
Romania	5,506	7,256	8,571	F2
Slovakia	574	493	527	F2, ANSP
Slovenia	59	35	56	F2
Spain	4,540	3,160	3,045	F2
Sweden	4,100	2,600	4,000	F2, LFV

Table 16 – Amounts financed in respect of en route exempted military flights in '000 national currency (source: PRB elaboration on the questionnaire and the reporting tables).

128 The results of PRB computations for all the SES en route charging zones are presented in the Annex.

[57] Article 22 (6) (b) of the performance and charging Regulation for the determined costs of exempted IFR flights and Article 23 for the actual costs of exempted IFR flights.

6.5 PRB considerations on the two methodologies for calculating the costs for exempted IFR military flights

129 According to the PRB computations, at SES level, the actual costs for exempted GAT IFR military flights if calculated for all States under Formula 1, would represent 0.6% of the total actual en route costs in 2019, and 1.4% in both 2020 and 2021 (Table 17).

130 Under Formula 1, the actual costs computed for 2020 and for 2021 would each correspond to more than the double of the costs computed for 2019. This is mainly due to the fact that the total service units in 2020 and 2021 were significantly lower than in 2019 due to the COVID-19 crisis, while the service units for exempted military flights continued to grow year-on-year.

	2019A	2020A	2021A
Actual costs for exempted military flights (in M€)	38	84	84
Total actual costs (in M€)	6,299	6,130	5,999
Actual costs for exempted military flights/total actual costs	0.6%	1.4%	1.4%

Table 17 – En route actual costs for exempted GAT IFR military flights in 2019 to 2021 (source: PRB elaboration based on the actual costs reported by the States in the November 2022 reporting tables, the actual service units for exempted military flights reported by the CRCO and the Reuters annual average exchange rates).

131 According to the PRB computations, at SES level, the charges relating to exempted GAT IFR military flights if calculated under Formula 2 would represent 0.6-0.7% of the total actual en route charges in 2019, 2020 and 2021 (Table 18).

	2019A	2020A	2021A
Charges for exempted military flights (in M€)	42	38	40
Total charges (in M€)	6,299	6,130	5,999
Charges for exempted military flights/total charges	0.7%	0.6%	0.7%

Table 18 – En route charges relating to exempted GAT IFR military flights in 2019 to 2021 (source: PRB elaboration on the applied unit rates from RP2 and RP3 reporting tables, the actual service units for exempted military flights reported by the CRCO and the Reuters annual average exchange rates).

132 Under Formula 2, the charges computed for 2020 and for 2021 would be similar than those computed for 2019. Under this methodology, the amounts for the exempted users are calculated the same way as the amounts billed to the chargeable airspace users.

133 The PRB considers this methodology appropriate for the purpose of the financing whether in periods of stability or volatility of the traffic. This methodology ensures that the exempted flights are charged according to the same rules as the chargeable flights (with the difference that they would be charged to the State and not to the users concerned). It also ensures that all adjustments to the unit rates are taken into account *in fine* and reflected the same way for exempted flights than for chargeable flights. This transparent and simple methodology ensures as well that the chargeable users are not burdened with costs for exempted flights, in accordance with Articles 15 3 (a) and (b) of the service provision Regulation.

6.6 Means of financing of costs for services provided to IFR flights exempted from en route charges

134 The answers from the NSAs to question 15 of the questionnaire on the means of financing the costs incurred for military exempted GAT IFR flights for years 2019 to 2021 are detailed in the Annex and summarised in the following paragraphs.

135 Out of the 17 States for which amounts are reported in question 15:

- 13 States indicate that the amounts for exempted GAT military flights are covered by the State: For five States the NSA specifies that the amounts are covered by the MoD (Austria, Germany, Hungary, Lithuania, and Slovenia); For Romania and Poland, the NSAs indicate that the amounts are reimbursed by the MoT. For the remaining six States (Belgium, Czech Republic, Italy, Slovakia, Spain, and Sweden), the Ministry concerned is not specified.
- In Bulgaria, the PRB understands that the costs for services to exempted flights are indirectly covered by the State through a portion of the en route charges collected by the ANSP

on behalf of the State but kept by the ANSP. In France, although the NSA did not answer question 15 on the financing, the PRB notes that the additional information to the en route cost base indicates that the amounts are financed through the general budget of the Direction Générale de l'Aviation Civile (DGAC).

- In two States (Finland and Norway), the costs for exempted GAT IFR flights are reported to be charged to their respective military Air Forces.

136 Out of the eight States having reported no amount in question 15:

- For two States (Cyprus and Greece), the PRB understands that the amounts are indirectly covered by the State, as the State collects the en route charges and in turn covers the costs incurred by the ANSP to provide en route ANS.
- For Latvia, the PRB understands that the costs for services to exempted flights are indirectly covered by the State through a portion of the en route charges collected by the ANSP on behalf of the State but kept by the ANSP.
- For Switzerland, the NSA indicated that the costs for military exempted flights are not available separately as they are booked together with the costs for the other IFR exempted flights. The NSA confirmed that all IFR exempted flights are fully financed by the State. The Swiss NSA further clarifies that "exempted military flights refer only to foreign military flights. The exempted national flights are part of the service level agreement".
- For the Netherlands, although the NSA did not answer question 15, the PRB notes that the additional information provided to the reporting tables of the Netherlands en route cost base indicate that a financial compensation is provided by the State for the services provided to the exempted flights.
- For Croatia, the NSA has not reported any amounts in question 15 and indicated that this information is "State confidential", while in respect of the financing, the NSA indicates that these are financed by the State.
- For Malta, the NSA has not answered question 15 and indicated that the information is not available. The PRB notes that the additional information provided to the reporting tables of Malta's cost base indicates that "the Maltese Government reimburses MATS for the costs related to exempted flights through a long-term agreement". The PRB finds it unclear how such agreement applies in the absence of available amounts.
- For Ireland, the NSA has not answered question 15. The PRB notes that the additional information provided to the reporting tables of Ireland's cost base indicates that the funding of the exempted flights "is provided by the State" but does not present any amounts for exempted IFR flights.

6.7 Conclusions

137 The share of traffic relating to the military exempted GAT IFR flights on the total traffic handled by the SES ANSPs is relatively small at SES level (typically around 1%). At individual State level, increases in the number of service units for exempted military GAT flights are observed in 2022 due to increased military activities.

138 According to Article 31(6) of the performance and charging Regulation, the costs incurred by the ANSPs for providing services to exempted flights have to be covered by the States. Only 17 of the 25 States having responded to the PRB questionnaire have indicated the amounts concerned.

139 Different methodologies are used to compute these amounts. The most widely used methodology is based on the unit rate for the charging zone multiplied by the actual service units for exempted military GAT IFR flights. The PRB considers that this simple and transparent methodology ensures that the exempted flights are treated according to the same rules as the chargeable flights and hence that the chargeable users are not burdened with costs for exempted flights, also in accordance with Articles 15 3 (a) and (b) of the service provision Regulation.

140 In respect of the source of financing for the costs of services to exempted military GAT IFR flights, the NSAs of the 17 Member States confirmed that the costs are covered by the State. There are three exceptions: Finland and Norway, where the exempted military flights are billed to the military, and France where the costs are covered by the DGCA general budget.

141 The eight Member States for which amounts were not provided in relation to the costs incurred for providing en route ANS to exempted flights all

report that such costs are covered by the State, either directly or indirectly. In the absence of data on the amounts concerned, it is however not clear how such arrangements are applied in practice.

7 CONCLUSIONS AND RECOMMENDATIONS

142 The PRB concludes that the financial impact of shared civil-military resources and exempted GAT military flights on the en route costs charged to airspace users is limited at Union-wide level. However, at a local level, the impact is significant for some Member States. The information provided by the NSAs needs to be better detailed in the relevant sections of the performance plans and in the monitoring reports to provide clarity about cost allocations and needs to be verified in terms of compliance with the performance and charging Regulation.

143 Specific conclusions on the different chapters of the report are detailed below, together with PRB recommendations, where applicable.

Organisation for the provision of ANS between civil and military

144 The Member States organise the provision of civil and military ANS using one of three models: Integrated, co-located, or separated. A majority of ANSPs show a notable level of integrated co-operation, either as integrated or co-located with the military. Depending on the organisation, the services provided by the civil ANSPs to military non-GAT flights span from the full range of ANS to simple exchange of data.

ANS costs for infrastructure and services provided or made available by the civil ANSPs to non-GAT military flights

145 Costs for services and infrastructure provided by the civil ANSPs to non-GAT military flights are financed by the military and deducted from the en route cost base only for a small number of ANSPs. The PRB assessment suggests that one ANSP has included significant amounts relating to ANS to OAT flights in its cost base. For the remaining ANSPs, the NSAs justify not deducting any amounts from the en route cost bases on the grounds (a) that the ANSPs incur no or low additional costs to provide services to non-GAT military flights and b) that these services and infrastructures are provided to minimise possible negative impact of non-GAT traffic on airspace availability for GAT airspace users.

146 Recalling that Member States are required to establish the cost bases and unit rates for each charging zone in a transparent manner and that the NSAs must verify, in respect of each charging zone, that the cost bases comply with the performance and charging Regulation, the PRB recommends that RP4 performance plans include:

- A detailed description of the methodology used by the ANSPs to allocate their costs to GAT and non-GAT activities, and
- A confirmation from the NSA that they have verified that costs are appropriately allocated and that no costs relating to services and equipment relating to non-GAT traffic are included in the ANS cost bases and unit rates charged to GAT airspace users.

147 Based on the justifications provided by most NSAs for not deducting amounts from the en route cost base in respect of costs for services and infrastructure provided to non-GAT military flights, the PRB recommends that the RP4 guidance material is clarified to detail, if, and under which conditions, costs relating to services and equipment made available to non-GAT traffic could be calculated through a marginal cost methodology on the grounds that these services and equipment are provided for the benefit of GAT IFR flights.

ANS costs for ANS infrastructure and services provided or made available by the military to GAT flights

148 Costs for services and infrastructure provided by the military to GAT flights are included in the en route cost bases of eight Member States, representing in total 2% of the actual en route costs at Union-wide level in 2021. These costs relate mainly to SAR, MET and to ANS around military airport used for GAT traffic and are significant for some Member States.

149 Recalling the requirement for transparency of the cost bases and unit rates charged to airspace users under the performance and charging Regulation, the PRB recommends that those Member States which are including costs for services and infrastructure provided by the military to GAT flights in their ANS cost bases specifically describe in their RP4 performance plan the nature of these services and infrastructure, as well as the methodology applied to allocate the costs of the military between non-GAT and GAT users and between en route and terminal.

ANS costs for implementation and operation of Flexible Use of Airspace (FUA)

150 Costs for FUA implementation and operations incurred by the civil ANSPs are difficult to identify separately in the ANSPs accounts but are reported to have only a limited impact on the ANSPs en route cost bases. Some NSAs seem to confuse FUA costs with costs incurred by ANSPs for the provision of ANS to non-GAT flights or with costs for exempted flights.

151 Recalling that the implementation of an efficient FUA concept requires interoperable systems to be implemented in a harmonised way and operated according to the SES Regulation, notably CP1; and acknowledging that annual costs exist to operate an efficient FUA, the PRB recommends that the RP4 guidance material is clarified to detail what FUA related costs can be considered eligible for inclusion in the ANSP's cost base.

ANS costs for services provided to exempted military GAT IFR flights

152 Costs incurred by the ANSPs for providing services to military exempted GAT flights account for around 1% of the total en route costs at Union-wide level. These costs should be covered by the Member States to ensure that they are not passed on to other users. However, it is not clear to the PRB how these costs are calculated and what financial arrangements are in place. In some Member States, the costs can be significant and have increased in 2022 due to intensified military activities.

153 Recalling that the Member States must cover the costs for the services that ANSPs provide to flights exempted from en route charges or terminal charges and noting that the appropriate information is not consistently provided by all Member States, the PRB recommends that RP4 performance plans and monitoring reports include more detailed information on the financial arrangements and the amounts covered by the Member States in respect of exempted flights.

154 Observing that the Member States apply different methodologies to calculate the costs for exempted IFR flights that are to be financed by the Member States, and concluding that the methodology based on the unit rate and actual service units for exempted IFR flights is simple, transparent and ensures that the chargeable users are not burdened with costs for exempted flights, the PRB recommends that the RP4 guidance material is clarified to further explain this methodology.

PRB | Performance review body of the single european sky

Air navigation services and infrastructure used for both civil and military airspace users under the performance and charging scheme of the Single European Sky

Annex

October 2023

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1 ACRONYMS

The acronyms used in the report are detailed in this section.

ACC	Area Control Centre
AF	ATM Functionality
A-FUA	Advanced Flexible Use of Airspace
AIM	Aeronautical Information Management
AIS	Aeronautical Information Services
AMC	Airspace Management Cell
ANS	Air Navigation Services
ANSP	Air Navigation Service Provider
ARES	Airspace Reservation
ASM	Airspace Management
ATC	Air Traffic Control
ATCC	Air Traffic Control Centre
ATCO	Air Traffic Control Officer
ATFCM	Air Traffic Flow and Capacity Management
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATS	Air Traffic Services
ATSP	Air Traffic Service Provider
AUP	Airspace Use Plan
CAA	Civil Aviation Authority
CDM	Collaborative Decision Making
CIMACT	Civil-Military Aviation Coordination Tool
CNS	Communication, Navigation, Surveillance
CP1	Common Project One
CRCO	Central Route Charges Office
CTA	control area
CTR	Control zone
CURA	Civil Use of Released Airspace
CWP	Controller Working Position
DCB	Demand-Capacity Balancing
EASA	European Union Aviation Safety Agency
EATMN	European Air Traffic Management Network
EC	European Commission

ECAC	European Civil Aviation Conference
EDA	European Defence Agency
EU	European Union
EUROAT	EUROCONTROL Publication for harmonised Rules for OAT under IFR inside controlled Airspace of the ECAC Area
FIR	Flight Information Region
FPD	Flight Procedure Design
FPL	Flight Plan
FUA	Flexible Use of Airspace
GAT	General Air Traffic
ICAO	International Civil Aviation Organisation
IFP	Instrument Flight Procedure
IFPS	Flight Plan processing system
IFR	Instrument Flying Rules
LARA	Local and sub-regional airspace management support system
MCC	Military Control Centre
MET	Meteorology
MUAC	Maastricht Upper Area Control
NATO	North Atlantic Treaty Organisation
NM	Network Manager
NMIR	NM Interactive Reporting
NSA	National Supervisory Authority
OAT	Operational Air Traffic
PCP	Pilot Common Project
PRB	Performance Review Body
PRISMIL	Pan-European Repository of Information Supporting Civil-Military Performance Monitoring
SAR	Search And Rescue
SES	Single European Sky
SESAR	Single European Sky ATM Research
UIR	Upper Flight Information Region
UUP	Updated Airspace Use Plan

2 PRB QUESTIONNAIRE TO THE NATIONAL SUPERVISORY AUTHORITIES

Air navigation services and infrastructure used for both civil and military airspace users Questionnaire to the National Supervisory Authorities

Member State(s):	
Name of Responding NSA:	
Contact person:	
E-mail address:	
Date of submission:	
Name of civil ANSP[1]:	
Name of military ANSP(s):	

I. ORGANISATION FOR THE PROVISION OF ANS BETWEEN CIVIL AND MILITARY

1. Please describe the existing organisation for the provision of en route ANS (services and infrastructure) in place between the civil ANSP[2] and the military in your State.

Existing organisation for the provision of en route ANS between civil and military	
Please select from the list below the sentence which best reflects the existing organisation in your State:	
	En route ANS to both GAT and OAT are provided primarily by a fully integrated civil-military ATSP.
	En route ANS are provided separately primarily by the civil for flights operating under GAT and primarily by the military for flights operating under OAT from the same ACC.
	En route ANS are provided separately primarily by the civil for flights operating under GAT and primarily by the military for flights operating under OAT, each from its own ACC(s)/ATC unit(s).
Additional comments:	

2. OPTIONAL - Please indicate the aerodromes/airfields controlled and operated by the military which are also used to a significant extent for civilian GAT IFR flights in your State, if any.

Aerodromes controlled and operated by the military which are also used for GAT IFR flights, if applicable.
Additional comments:

[1] Or the civil-military fully integrated ANSP, if applicable.
[2] Subject to this questionnaire as indicated in the first box.

II. SHARED USE OF AIR NAVIGATION SERVICES AND INFRASTRUCTURE BETWEEN CIVIL AND MILITARY[3]

II.A. AIR NAVIGATION SERVICES AND INFRASTRUCTURE PROVIDED OR MADE AVAILABLE BY THE CIVIL ANSP[4] TO NON-GAT IFR MILITARY FLIGHTS

3. Please a) indicate with a "X" which types of services are provided by the civil ANSP to non-GAT IFR military flights, if any, and b) provide a short description/explanation of each type.

Type of services provided by the civil ANSP to non-GAT IFR military flights		
Service type	Used by military	Description of service use by military
ATS		
CNS		
MET		
SAR		
Other ANS		
Additional comments:		

4. Please a) indicate with a "X" which types of equipment are made available by the civil ANSP and used for services to non-GAT IFR military flights, if any, and b) provide a short description/explanation for each type.

Type of equipment made available by the civil ANSP and used for services to non-GAT IFR military flights		
Equipment type	Used by military	Description of equipment use by military
Building(s)		
ATC system		
Radars		
VOR/DMEs		
DMEs		
Other equipment		
Additional comments		

5. Please provide (an estimate of) the number of non-GAT IFR en route military flights availing of services/infra-structure provided by the civil ANSP for years 2019 to 2021.

Number of non-GAT IFR en route military flights availing of services/infrastructure provided by the civil ANSP for years 2019 to 2021.	
2019A	
2020A	
2021A	

[3] ANS infrastructure and services used for both GAT IFR flights covered by the SES and military flights outside the scope of the SES.
[4] Or the integrated civil-military ANSP.

6. Please indicate a) how the amounts relating to the costs for ANS provided by the civil ANSP to non-GAT IFR military flights for years 2019 to 2021 have been financed and b) how the NSA ensures that these amounts are excluded from the cost bases charged to airspace users[5] (for determined and actual costs).

Financing of costs for ANS provided or made available by the civil ANSP to non-GAT IFR military flights in 2019-2021
Verification by the NSA to ensure that the costs for ANS provided by the civil ANSP to non-GAT IFR military flights are excluded from the determined and actual costs for the en route and terminal charging zone covered by the SES performance and charging Regulation.

II. B. AIR NAVIGATION SERVICES AND INFRASTRUCTURE PROVIDED OR MADE AVAILABLE BY THE MILITARY TO GAT IFR FLIGHTS

7. Please a) indicate with a "X" which types of services are provided by the military to GAT IFR flights in the en route airspace concerned[6], if any, and b) provide a short description/explanation of each type.

Type of services provided by the military to GAT IFR flights in the en route airspace concerned		
Service type	Used by GAT IFR	Description of service use by GAT IFR
ATS		
CNS		
MET		
SAR		
Other ANS		
Additional comments:		

8. Please a) indicate with a "X" which types of equipment are made available by the military and used for GAT IFR flights in the en route airspace concerned, if any and b) provide short description/explanation for each type.

Description of equipment owned by the military and used for GAT IFR flights		
Equipment type	Used by GAT IFR	Description of equipment use by GAT IFR
Building(s)		
ATC system		
Radars		
VOR/DMEs		
DMEs		
Other equipment		
Additional comments		

[5] In the scope of the performance and charging Regulation (EU) 2019/317.
[6] The airspace controlled by the civil ANSP subject to this questionnaire.

9. OPTIONAL - Please a) indicate which types of services and infrastructure are provided or made available to civilian GAT IFR flights at the military aerodromes/airfields listed in question 2 above and b) provide a short description/explanation.

Types of services and infrastructure provided or made available to civilian GAT IFR flights in the aerodromes/airfields controlled and operated by the military as listed in question 2 above.
Additional comments:

10. If applicable, please provide a) the **determined costs** for ANS provided by the military to GAT IFR flights which are included in the **en route cost base** for years 2019 to 2021, and b) describe the methodology used for calculating these costs.

Determined costs for ANS provided by the military to GAT IFR flights in 2019-2021 included in the en route cost base.	
2019D	
2020D	
2021D	
Methodology used for calculating the determined costs for ANS provided by the military to GAT IFR flights in 2019-2021 which are included in the en route cost base (if applicable).	
Additional comments:	

11. If applicable, please provide a) the **actual costs** for ANS provided by the military to GAT IFR flights that are included in the **en route cost base** for years 2019 to 2021, and b) describe the methodology used for calculating these costs.

Actual costs for ANS provided by the military to GAT IFR flights in 2019-2021 included in the en route cost base.	
2019A	
2020A	
2021A	
Methodology for calculating the actual costs for en route ANS provided by the military to GAT IFR flights in 2019-2021 which are included in the en route cost base (if applicable).	
Additional comments:	

III. IMPLEMENTATION AND OPERATION OF FUA

12. Please provide a) an estimate of the actual costs in '000 national currency and nominal terms incurred by the civil and military implementation and operation of FUA and b) specify what these costs include, and c) how they are financed.

En route actual costs in respect of FUA ('000 nat. curr.)	
ANS provided in year:	Actual costs
2019A	
2020A	
2021A	
Description of the en route costs incurred in respect of FUA in 2019-2021	
Financing of en route costs incurred in respect of FUA in 2019-2021	

IV. EXEMPTION OF MILITARY FLIGHTS FROM THE PAYMENT OF EN ROUTE CHARGES

13. Please describe the policy of exemption of military flights[7] from en route charges in your State.

Policy of exemption of military flights from en route charges

14. Please provide the amounts relating to the costs for the services provided to military flights exempted from en route air navigation charges[8], in respect of years 2019 to 2021 (in '000 national currency and nominal terms), separately for determined and actuals.

Costs for exempted military flights ('000 nat. curr.)		
ANS provided in year:	Determined costs	Actual costs
2019		
2020		
2021		

15. Please indicate how these amounts have been financed[9] for years 2019 to 2021.

Financing of en route costs for exempted military flights in 2019-2021	
ANS provided in year:	Amounts financed in respect of exempted military flights
2019	
2020	
2021	

[7] Performance and charging Regulation (EU) 2019/317 Article 31 (4).
[8] Performance and charging Regulation (EU) 2019/317 Article 22 (6) (b) and 23.
[9] Performance and charging Regulation (EU) 2019/317 Article 31 (6).

3 REPLIES RECEIVED TO PRB QUESTIONNAIRE BY THE NATIONAL SUPERVISORY AUTHORITIES

Member State	Name of Responding NSA	Date of sub-mission	Name of civil ANSP	Name of military ANSP(s)
Austria	Austrian NSA	28-04-2023	Austro Control	Directorate 2 (Federal Ministry of Defence)
Belgium	Belgian NSA	09-06-2023	skeyes/ MUAC Belgium	Belgian Airforce
Bulgaria	Bulgaria NSA	20-04-2023	BULATSA	BULGARIAN AIR FORCE - BUAF
Croatia	Croatia NSA	21-04-2023	Croatia Control	
Cyprus	Cyprus NSA	04-05-2023	DCAC Cyprus	N/A
Czech Republic	CAA Czech Republic	05-05-2023	ANS CR	Air Force Czech Republic
Denmark	Not received	Not received	Not received	Not received
Estonia	Not received	Not received	Not received	Not received
Finland	Finland NSA	31-03-2023	Fintraffic ANS	-
France	France NSA	24-04-2023	DSNA	
Germany	BAF (German NSA)	25-04-2023	DFS Deutsche Flugsicher-ung GmbH	Zentrum Luftoperationen (ZLO)
Greece	Greece NSA (HCAA)	24-04-2023	HASP	Hellenic Air Force (HAF).
Hungary	Hungarian NSA	04-04-2023	HungaroControl	
Ireland	Irish NSA	19-07-2023	IAA	Irish Air Corps
Italy	Italian NSA	24-04-2023	ENAV	ITAF (Italian Air Force)
Latvia	Latvian NSA	17-04-2023	LGS	Military CRC (Control Report Service)
Lithuania	Lithuania NSA	26-04-2023	Oro Navigacija AB	LITHUANIAN AIR FORCE
Malta	Malta NSA	25-04-2023	MATS	N/A
MUAC	Netherlands NSA	25-04-2023	MUAC	De Minister van Defensie
Netherlands	Netherlands NSA	25-04-2023	LVNL	De Minister van Defensie
Norway	Norwegian NSA	21-04-2023	Avinor Flysikring AS (ANS)	
Poland	Polish NSA	24-04-2023	Polish Air Navigation Ser-vices Agency (PANSA)	Military Air Traffic Service Of-fice (MATSO)
Portugal	Not received	Not received	Not received	Not received
Romania	Romania NSA	20-04-23	ROMATSA	N/A for GAT
Slovakia	Slovakia NSA	26-04-2023	LPS	N/A

Slovenia	Slovenia NSA	10-04-2023	Slovenia Control	n/a
Spain	Spanish Civil NSA – AESA (State Safety and Security Aviation Agency) Spanish Military NSA – Spanish Air and Space Force Spanish Meteorological NSA - MITERD	11-04-2023	ENAIRE - AEMET	ANSP EA
Sweden	Sweden NSA	21-04-2023	LFV	LFV
Switzerland	Switzerland NSA	24-05-2023	Skyguide	

4 ACTUAL EN ROUTE SERVICE UNITS FOR EXEMPTED GAT IFR FLIGHTS (TOTAL, EXEMPTED, AND MILITARY EXEMPTED)

En route charging Zones	2018		2019		2020		2021		2022	
	Total SU	SU military ex-empted	Total SU	SU military ex-empted	Total SU	SU military ex-empted	Total SU	SU military ex-empted	Total SU	SU military ex-empted
Austria	3,198	8	3,340	7	1,509	6	1,799	7	3,248	7
Belgium-Luxembourg	2,644	12	2,621	12	1,081	11	1,167	11	2,096	12
Bulgaria	3,938	30	4,032	30	1,767	32	2,270	35	3,871	28
Croatia	1,994	2	2,194	3	929	3	1,519	4	2,229	4
Cyprus	1,897	22	2,068	22	852	25	1,266	25	1,788	21
Czech Republic	3,041	34	2,937	35	1,139	37	1,280	37	1,814	36
Denmark	1,709	9	1,781	8	717	9	785	9	1,282	14
Estonia	920	1	901	1	419	1	467	1	429	2
Finland	940	1	1,011	1	462	1	495	1	598	1
France	21,450	141	21,786	137	8,546	131	11,181	137	18,898	125
Germany (1)	14,932	36	15,132	32	6,793	32	7,679	33	12,519	46
Greece	5,600	84	6,006	79	2,755	79	4,048	72	6,416	63
Hungary	3,236	26	3,162	26	1,423	27	1,727	29	3,184	29
Ireland	4,550	38	4,642	39	1,986	33	2,419	33	4,233	38
Italy	9,434	127	10,047	123	3,990	115	5,783	123	9,562	122
Latvia	938	6	958	6	439	5	542	5	466	8
Lithuania	603	3	619	3	333	4	443	4	376	5
Malta	935	33	1,020	29	396	31	504	32	667	27
Netherlands	3,392	29	3,382	30	1,480	30	1,565	29	2,586	38
Norway	2,522	17	2,437	16	1,230	13	1,445	14	2,071	20
Poland	4,666	28	4,972	28	2,146	27	2,586	27	3,129	65
Portugal	3,856	25	4,061	27	1,556	26	1,988	30	3,695	25
Romania	5,101	37	5,118	39	2,246	40	2,870	44	4,770	42
Slovakia	1,296	11	1,292	12	475	12	612	12	973	12
Slovenia	572	1	628	1	264	1	370	1	595	3
Spain Canarias	1,788	11	1,952	12	803	9	1,008	8	1,790	9
Spain Continental	11,059	67	11,490	70	4,437	57	6,383	64	11,079	62
Sweden	3,813	13	3,821	10	1,677	7	1,795	10	2,472	16
Switzerland	1,741	1	1,769	1	651	1	897	2	1,545	1
Union-wide	**121,765**	**854**	**125,177**	**837**	**52,500**	**802**	**66,893**	**839**	**108,380**	**882**

(1) Excluding service units for flight segments performed as Operational Air Traffic.

Source: Central Route Charges Office, Report on the Operation of the Route Charges System in 2018-2022.

Charging Zone	2018	2019	2020	2021	2022
	SU military exempted / total SU	SU military exempted / total SU	SU military exempted / total SU	SU military exempted / total SU	SU military exempted / total SU
Austria	0.3%	0.2%	0.4%	0.4%	0.2%
Belgium-Lux-	0.4%	0.4%	1.0%	1.0%	0.6%
Bulgaria	0.8%	0.7%	1.8%	1.5%	0.7%
Croatia	0.1%	0.1%	0.3%	0.3%	0.2%
Cyprus	1.2%	1.0%	2.9%	2.0%	1.2%
Czech Republic	1.1%	1.2%	3.2%	2.9%	2.0%
Denmark	0.5%	0.4%	1.2%	1.1%	1.1%
Estonia	0.1%	0.1%	0.2%	0.2%	0.4%
Finland	0.1%	0.1%	0.1%	0.2%	0.2%
France	0.7%	0.6%	1.5%	1.2%	0.7%
Germany (1)	0.2%	0.2%	0.5%	0.4%	0.4%
Greece	1.5%	1.3%	2.9%	1.8%	1.0%
Hungary	0.8%	0.8%	1.9%	1.7%	0.9%
Ireland	0.8%	0.8%	1.7%	1.4%	0.9%
Italy	1.3%	1.2%	2.9%	2.1%	1.3%
Latvia	0.6%	0.6%	1.1%	1.0%	1.6%
Lithuania	0.6%	0.5%	1.2%	1.0%	1.4%
Malta	3.5%	2.9%	7.8%	6.3%	4.1%
Netherlands	0.9%	0.9%	2.0%	1.9%	1.5%
Norway	0.7%	0.6%	1.1%	1.0%	1.0%
Poland	0.6%	0.6%	1.3%	1.0%	2.1%
Portugal	0.7%	0.7%	1.6%	1.5%	0.7%
Romania	0.7%	0.8%	1.8%	1.5%	0.9%
Slovakia	0.8%	0.9%	2.5%	2.0%	1.2%
Slovenia	0.2%	0.2%	0.2%	0.3%	0.5%
Spain Canarias	0.6%	0.6%	1.1%	0.8%	0.5%
Spain Conti-	0.6%	0.6%	1.3%	1.0%	0.6%
Sweden	0.3%	0.3%	0.4%	0.5%	0.6%
Switzerland	0.1%	0.1%	0.1%	0.2%	0.1%
Union-wide	**0.7%**	**0.7%**	**1.5%**	**1.3%**	**0.8%**

(1) Excluding service units for flight segments performed as Operational Air Traffic.
Source: Central Route Charges Office, Report on the Operation of the Route Charges System in 2018-2022.

5 PRB ANALYSIS OF THE NSA REPLIES

5.1 Organisation for the provision of ANS between civil and military

1 The ANSPs that the PRB allocated or re-allocated for the purpose of the report and the rationale for the allocation are described below for each of the models (see section 3 of the report).

Integrated civil-military ANSPs

2 DCA Cyprus: The Cypriot NSA did not select any of the models and indicated that "there are no military entity(ies) providing services to GAT in the airspace covered by the civil ANSP." The PRB understands from the LSSIP that "the Cypriot National Guard does not have any ATM service provision role. Any services to OAT are provided by DCAC-ANSP or, in the case of MET the by the Cyprus Meteorological Service".[10] The PRB therefore assigned DCA Cyprus to the "integrated civil-military ANSPs" model for the purpose of the report.

3 MATS: The Maltese NSA did not select any of the models as it indicated that none of the "applies to Malta as the ATSP is a civilian company which handles both civilian and military AT". The PRB therefore assigned MATS to the "integrated civil-military ANSPs" model for the purpose of the report.

4 MUAC: The Dutch NSA indicated that "MUAC has differing arrangements per State. In the Netherlands: (Airspace Management Cell (AMC) and civil/military integration for ATS; In Germany: civil/military integrated for ATS; in Belgium: MUAC controls military flights en-route when flying as GAT, BelDef controls OAT. All services above FL245". For the report, the PRB presents MUAC in the "integrated civil-military ANSPs" model, although not applicable to Belgium's and Luxembourg's situations.

Co-located civil and military ANSPs

5 Austro Control: The Austrian NSA presented Austro Control in the "separated civil and military ANSPs" model. However, the NSA also indicates that "some of Austro Control's facilities, data and rooms are used for the provision of military air navigation services". The PRB therefore reassigned Austro Control to the "co-located civil and military ANSPs" model for the purpose of the report.

6 ENAV: The Italian NSA presented ENAV in the "separated civil and military ANSPs" model. However, the PRB understands from the LSSIP that: "Air traffic services to OAT are provided by ITAF with the 4 SCCAM (Coordination and Control Service for the Air Force) co-located within ENAV's ACCs and the other Military ATC Units for TWR and APP Services. The SCCAM location inside the ENAV's ACC ensures close cooperation between civil and military Air Traffic Controllers with the provision of services (GAT by ENAV, OAT by ITAF) regulated by local Letters of Agreement in accordance with Italian legislation. The co-location of civil and military controllers in the same operational room allows them to use the same fully integrated equipment".[11] The PRB therefore reassigned ENAV to the "co-located civil and military ANSPs" model for the purpose of the report.

7 IAA: The Irish NSA reported the Irish ANSP in the "separated civil and military ANSPs" model. However, the PRB understands from the additional comments provided in questions 1, 3, and 4 that the military have access to the Dublin ACC sector and use a COOPANS sector of the ATC system in Dublin ACC. In addition, the PRB understands from the LSSIP that "military ATC units share the same facilities and systems as the civil units, but they only manage the traffic within the military areas. Any military airplane transiting civil airspace will be controlled by a civil ATC unit".[12] Based on this, the PRB reassigned IAA to the "co-located civil and military ANSPs" model for the purpose of the report.

Separated civil and military ANSPs

8 ORO Navigacija: The Lithuanian NSA did not select any of the models as it indicated that none of the models of question 1 reflects the situation in Lithuania "No military ANS service provider, no military ACC, no licensed ATCOs under Ministry of Defence of Lithuania. OAT flights are operated and coordinated by military ATC units based abroad".

[10] LSSIP Year 2021 Cyprus, p.25.
[11] LSSIP Year 2021 Italy, p.36.
[12] LSSIP year 2021 Ireland, p.26.

On this basis, the PRB assigned ORO Navigacija to the "separated civil and military ANSPs" model for the purpose of the report.

5.2 *ANS costs for resources used for both civil and military airspace users*

ANS infrastructure and services provided or madeavailable by the civil ANSPs to non-GAT military flights (NSA replies to questions 3, 4 and 6)

9 Services and infrastructure provided by integrated civil-military ANSPs **DCA Cyprus**: The NSA confirms that "the civil ANSP does not provide services to non-GAT IFR military flights". The PRB understands that, although DCA Cyprus is the only ANSP in Cyprus airspace responsible for providing ANS to GAT and OAT, there is *de facto* no ANS to OAT and the controlled IFR military flights are all flying under GAT. Hence no costs are associated to the provision of such services.

10 **Croatia Control**: The Croatian NSA reports that Croatia Control "provides integrated ANS service both to GAT and OAT services". Croatia Control provides ATS, CNS, MET and AIS/AIM services to military non-GAT flights and "owns the equipment for the purpose of the provision of integrated ATS service". The Croatian NSA indicates that a "financial agreement between the CCL and the Ministry of Transport stipulates that all exempted IFR flights (incl. military) are reimbursed to the ANSP from State budget". The PRB understands that this answer to question 6 refers to the financing of ANS provided to exempted GAT military flights (addressed in question 15) and not to the financing of ANS provided to non-GAT military flights. The PRB also understands from the answer provided to question 4, that Croatia considers that the marginal cost for providing ANS to non-GAT military flights is insignificant for the equipment made available to the military as the equipment owned by Croatia Control "for the purpose of the provision of integrated ATS service […] would have been used irrespectively of military stakeholder". The PRB therefore infers that that no costs for ANS or equipment used by military non-GAT flights are deducted from the air navigation cost bases covered by the SES.

11 **ANS CR**: The NSA indicates that the following services are provided to the military: ATC services (ACC), CNS (the military uses both civil and military SUR services for identification and correlation of all flights), SAR (integrated civil-military RCC) and other ANS (Military uses the AIP CR although they have their own military AIP). In respect of infrastructure, the integrated AMC unit is deployed in the civil ATCC building and some of the military ATM/ANS servers are installed in the civil IATCC building to ensure safe and reliable exchange of data and information. The military use the ATC TOPSKY system (only for OAT - Compatible flights). SUR data is shared, as well as VOR/DMEs and DMEs for en route. The Czech NSA clarifies that "ANS for OAT Compatible flights (OAT-C) are provided primarily by civil ATSP. ANS for OAT Special flights (OAT-S) are provided by military units." The Czech NSA reports that "the costs related to these flights are financed through state budget (Agreement concluded between ANS CR and Ministry of Defence) annually amounted to around 260,000€, i.e. 0.25 % of the total cost base". However, these amounts were not directly deducted from the cost base until 2022 for the following reasons:

- Only a small portion (10%) of these flights (OAT-C) from military airports to military areas take place in the airspace covered by ANS CR services, while the largest portion (90%) takes place in the area of responsibility of regional airports (below flight level 125 ft) which are exempted from scope of the performance and charging Regulation (EU) 2019/317.
- "The costs are insignificant, equalling to some 0.25 % of en-route cost base, furthermore services provided for these flights are essential for ensuring smooth operations of the commercial traffic."

12 The NSA indicates that from 2022, due to organisational change, these services are provided by the ACC and that, therefore, the above-mentioned payment from the Ministry of Defence is deducted from the calculation of the unit rate as national public funding. The PRB notes that this is reflected in respect of 2022 in the reporting tables submitted in June 2023 for the en route charging zone.

13 **Fintraffic ANS**: The Finnish NSA reports that Fintraffic ANS partially provides OAT services in TRA areas. These include ATS (TWR, APP, ACC, AMC, and FPC), CNS, MET (based on data purchased from FMI), SAR, and AIS. Infrastructure and equipment made available to non-GAT flights comprise the ATCC Helsinki building, the ATC system,

radars, VOR/DMEs (made available by Finavia and used by Fintraffic ANS for service provision), DMEs and AIS equipment. The Finnish NSA reports that "Fintraffic ANS do not receive any funding for non-GAT IFR military flights from the military". It also indicates that "it is very rare to provide such service in SES-regulated charging zones and has a marginal effect on the cost base. So far, this specific item has not been on the scope for the cost verifications". The PRB therefore concludes that no costs for ANS provided to military non-GAT flights are deducted from the air navigation cost bases covered by the SES.

14 DFS: The German NSA reports that DFS provides ATS and CNS services to non-GAT flights. Infrastructure and equipment made available to the military include office space for military personnel within DFS, ATC system (Phoenix), radars, VOR/DMEs, DMEs and TACAN. "The civil and military radar network are used in a shared manner" (see also para 56). "All services provided by DFS and used by the military are subject to contractual agreements that cover financial agreement". The German NSA indicates that "cost reimbursement for non-GAT IFR military flights (OAT) is provided by the German Ministry of Defence". The PRB notes that the treatment of traffic relating to non-GAT flights (OAT flights) is specific for Germany, as service units relating to OAT flights are included in the total service units recorded by the CRCO and by STATFOR,but are excluded for the establishment of the unit rates. In respect of the verification by the NSA, the answer to question 6 specifies that in addition to the "general tasks of supervision of the service provision by DFS and the examination of the presented cost base for the respective performance plan, NSA is also regular member of the committee on civil-military cooperation (AZMZ) and has direct contact to the unit responsible for billing issues at ZLO". [13]

15 MATS: The Maltese NSA states that "the Maltese military have no operated non-GAT IFR flights. Further, the ANSP does not have visibility of foreign OAT military within the Malta FIR as these operate on the principle of due regard. The Maltese government does not authorise foreign military aircraft to operate within Maltese sovereign airspace as OAT traffic". The PRB understands that, although MATS is the only ANSP in Malta airspace responsible for providing ANS to GAT and OAT, there is de facto no ANS to OAT and the controlled military flights are all flying under GAT.

16 MUAC: The Dutch NSA explains that "MUAC has differing arrangements per State".[14] "Since 2017, MUAC has controlled military air traffic in the upper airspace of Germany and the Netherlands."[15] In the Netherlands and Germany, MUAC provides ATS to non-GAT flights above FL245 and makes available building space and the ATC system to the military. In Belgium and Luxembourg, MUAC controls military flights en-route when flying as GAT, while the Belgian Defence controls OAT.

17 The Dutch NSA reports that the amounts relating to ANS provided to non-GAT flights are covered through "financial contributions from respective military counter parties". The amounts include:

- A contribution for OAT from the German MoD (2019: not available; 2020: 9,481,880€; 2021: 9,650,238€);
- A contribution from the Belgian Defence for the SAS 2 system (2019: 939,324€; 2020: 740,000€ 2021: 957,840€); and
- A contribution from the Netherlands MoD for OAT & AMC service provision (2019: 3,072,955€; 2020: 2,984,163€, 2021: 2,908,608€).

18 In respect of the verification by the NSA, the Dutch NSA reports that it "is part of the MUAC Finance Performance Committee which receives and controls all MUAC financial and performance reports".

19 Avinor: The Norwegian NSA reports that "Avinor ANS provides en route and approach services for all military activity". This includes ATS (ATC, FIS), CNS, MET, and SAR services. Infrastructure and equipment made available to the military include the ACC building, the ATC system (NATCON), CNS equipment, and FPL services. The NSA reports that the ANS costs to the military, including the costs "incurred by separation of civilian/ military traffic as a consequence of military activity in its own allocated areas, cf. the FUA regulations, are in previous RPs (up to 2019) covered by Avinor AS through commercial income based on invoices

[13] Zentrum Luftoperationen (ZLO), military ANSP in Germany.
[14] The Dutch NSA is the NSA for MUAC.
[15] https://www.eurocontrol.int/info/about-our-maastricht-upper-area-control-centre.

from Avinor Flysikring AS (ANSP) according to the national regulations. In 2020-2021 these costs were financed by both military and civil airspace users through the en-route cost base (approx. 32.5 MNOK)". In respect of the verification by the NSA, the Norwegian NSA indicates that "ANS-costs regarding military flights are included in the cost base. Chargeable military flights (exempted military flights from Eurocontrol), national A-B military IFR-flights are invoiced directly from Avinor Flysikring AS (ANS) to the military".

20 The PRB understands that the above-mentioned costs of 32.5MNOK (around 3.3M€) per year are not only relating to FUA implementation and operations (question 12) but also include ANS provided by Avinor to military non-GAT flights. The PRB also understands that the amounts invoiced by Avinor to the military relate to the costs of ANS provided to exempted military GAT flights and not to OAT military flights.

21 If this confirmed, the inclusion of costs relating to ANS to OAT flights in the cost base would not be compliant with the SES regulations.

22 Slovenia Control: The Slovenian NSA reports that "Slovenia Control is the only ANSP in the Republic of Slovenia. It is not considered as a civil-military provider, but strictly civil." The ANS and infrastructure reported to be provided to the military are marked as being provided "in the same scope as to GAT". The NSA further clarifies that "OAT is not implemented".

23 The Slovenian NSA marked question 6 on financing as not applicable. The PRB understands that, although Slovenia Control is the only ANSP in Slovenian airspace responsible for providing ANS to GAT and OAT, there is *de facto* no ANS to OAT and the controlled IFR military flights are all flying under GAT. Hence no costs are associated to the provision of such services.

24 LFV: The Swedish NSA reports that "LFV is a combined civil and military ANSP and is completely integrated with the military". ANS provided to non-GAT flights include ATS (LFV handle all military flights outside of military exercise sectors, CNS (Military uses all S services. Part of C and assumingly they use N infrastructure available for all flying), MET (LFV provide part of MET services to military even if they also have their own MET parts) and AIM. The equipment made available to the military comprise buildings, ATC system (all controlled from ACC in the ATM system), radars (used by LFV and also by military for their own purposes), VOR/DMEs, and DMEs.

25 The Swedish NSA indicates that LFV have agreements with military for various services that LFV provide for the military. One for local ATS, one for en route and several for specific services such as AIM. All of these are calculated based on various factors agreed between LFV and military. For SAR, "the financial allocation model of SAR separates GAT and non-GAT IFR military flights. Military is financing its own share". In respect of NSA verification, the NSA confirms that "the military pay the full cost for their services. These costs are removed from the en route cost base". The PRB notes from LFV annual report that, in 2021, LFV ANS were mainly financed by en route charges (76%), compensation from the Swedish Armed Forces (12%) and compensation for operations at civil airports (11%).[16]

26 Skyguide: The Swiss NSA reports that "Skyguide provides Air Navigation Services for both civil and military flights." ANS provided to military flights include ATS, CNS and MET. The Swiss NSA provided details of these services in an appendix to the questionnaire. Equipment made available by Skyguide to the military include the ATC system and radars.

27 The Swiss NSA indicates that "the services and infrastructures are split between civil and military flights. However, some services are provided for civil and military flights, the costs related to these services are split to some extent and where possible according to allocation keys between civil and military". In respect of the NSA verification, the Swiss NSA confirms that "costs for ANS provided by the civil ANSP to non-GAT IFR military flights are excluded from the determined and actual costs for the en route and terminal charging zone covered by the SES performance and charging Regulation".

Services and infrastructure provided by civil ANSPs co-located with the military

28 Austro Control: The Austrian NSA explains that "the services for en route ANS are provided completely independently by Austro Control with its

[16] LFV Annual Report 2021, p.18.

own staff for civil air traffic control in the ACC and military air traffic control is provided by the Ministry of Defence with its own staff in the MCC.[17] Some of Austro Control's facilities, data and rooms are used for the provision of military air navigation services". This includes the Topsky ATM system used by the military and the provision of civil radar data, flight plan data, communication services and weather services. The Austrian NSA reports that "The costs of equipment and data made available by Austro Control to the military are regulated in a detailed framework agreement. The settlement result is paid by the Ministry of Defence to Austro Control." "The amount for the provision of facilities and services amounted to approximately €11 million[18] net in recent years". In respect of the NSA verification, "the annual accounting of services to the military is presented to the NSA as part of the review of the SES certificate. The audit of the settlement of the framework agreement with the military, as well as the results of en route costs and TNC costs, is also carried out by auditors as part of the audit of the annual financial statements. This ensures that the allocation of costs for both civil and military air navigation services is carried out properly". The PRB notes that the above-mentioned amounts are recorded in the annual accounts of Austro Control as "charges for services rendered to MoD", which are reimbursed to Austro Control.

29 **Skeyes**: The Belgian NSA specifies that "skeyes is responsible for the provision of air traffic services within the Brussels FIR/UIR up to and including FL245, with the exception of the airspace within which air traffic services are provided by ANA. Belgian Defence is responsible for the provision of air traffic services to OAT within the Brussels FIR/UIR. In 2015, the Minister of Defence, the Minister of Transport and skeyes signed a framework agreement to provide a joint aeronautical information service to civil and military flights (AIP, NOTAM, ARO...). In 2018, the Minister of Defence and the Minister of Transport signed a framework agreement to achieve synergies in the domain of air navigation services and the integration of civil and military air traffic control services by 2030. A first important step towards integration was achieved in December 2019 with the co-location of the civil and military air traffic control centres in skeyes' premises".

30 The NSA indicates that the Belgian Defence makes use of the facilities of skeyes (part of the ACC, offices, technical room, Datacom network, security control on racks …). Skeyes also provides radar data to the Belgian Defence "*in return for an annual fee*". The NSA specifies that skeyes and the Belgian Defence are planning to have a joint surveillance chain in the future, for which the cost will be "shared according to distribution keys established on the basis of the needs of the parties (1/3 Defence, 2/3 skeyes for cooperative surveillance, 1/2 Defence, 1/2 skeyes for non-cooperative surveillance)".

31 The NSA reports that the forecast revenues for services and equipment delivered by skeyes to the military are deducted from the cost base. After the closing of the financial accounts, the actual costs and revenues "are defined and balanced in an annual settlement between both parties". This mechanism does not apply to the joint provision of AIS, "for which the cost sharing between Defence and skeyes is specified in the Technical Agreements as part of the AIS framework agreement. Costs are rebilled to the Belgian Defence and have no impact on skeyes' en route cost base".

32 **DSNA**: The French NSA explains that CMCC[19] units located in the five civil ACCs and the CCMAR[20] Atlantique unit located in Brest ACC are providing services to non-GAT flights using DSNA infrastructure and equipment (CWP in the Ops room fed by civil data, radio back-up service). In respect of financing, France's NSA indicates that "dedicated costs e.g. CWP or back-up radio" are paid by the military. "Other related costs are marginal e.g. data already collected / computed for GAT made available to the military and space occupied in ATS units very limited".

33 The French NSA marked as "NA" the question relating to the verification that costs for ANS provided by the civil ANSP to non-GAT IFR military flights are excluded from the en route and terminal cost bases due to the fact that it considers that

[17] Military Control Centre.
[18] Annually.
[19] Space and Air Force Control & Coordination Military Center.
[20] Navy Control & Coordination Military Center.

these costs are marginal while the efforts required for a detailed verification would be too complex and provide little added value.

34 ENAV: The Italian NSA has not reported any service or equipment from ENAV to military non-GAT flights. The Italian NSA clarified that "ENAV does not make available any ANS or equipment to the military. ATS units in the airport or approach canters are managed by ENAV or ITAF. By law, at "area control" unit ENAV and ITAF share the same operational room and use the same software and hardware to better guarantee coordination, but any organization buy all the equipment and provide longlife logistic support by their own budget".

35 IAA: The Irish NSA indicates that the Irish Air Corps can avail of radar controller positions within the Dublin ACC to facilitate tactical civil-military coordination. In terms of services, the NSA reports under ANS that FIS and ATC services are provided to non-GAT IFR military flights outside of designated areas in certain circumstances. The NSA also reports CNS (civilian Radar, communications infrastructure, and navigational aids), MET (forecast and actual reports), SAR and other ANS provided to non-GAT IFR flights (FPD, ASM). In terms of equipment, the NSA indicates that the military have access to the Dublin ACC and have use of a COOPANS sector there. The military have access to surveillance data and use some VOR/DMEs and DMEs. The Irish NSA marked question 6 as not applicable and clarified that "cooperative non- GAT Military flights are restricted to designated military areas where Military ANS provides the service". The PRB understands that no or only a very limited number of military non-GAT flights are serviced by IAA and hence no costs are associated to the provision of such services.

36 LVNL: The Dutch NSA reports that the military ACC is co-located with LVNL at Schiphol. LVNL provides ATS to non-GAT flights when these are crossing civil controlled airspace, in TMA and CTR below FL245. The military use LVNL infrastructure due to co-location, while ATS is provided by Military ATCOs. In respect of financing, the NSA indicates that "all costs for military flights are paid by the state". In respect of the NSA verification, it specifies "reporting via CRCO, ANSP annual report including assessment by external accountant". The PRB understands that this answer to question 6 refers to the financing of ANS provided to exempted GAT military flights (addressed in question 15) and not to the financing of ANS provided to non-GAT military flights. The PRB understands nevertheless from the answer provided to question 4, that the military pays for use of civil system through a contract with LVNL.

37 ROMATSA: The Romanian NSA reports that GAT-OAT coordination military units are co-located with ROMATSA at three ROMATSA ATC facilities and use the civil ATC system. CNS equipment is made available for the military at the commonly used aerodromes (VOR/DMEs, DMEs, ILS). Civil-military radar information is exchanged based on a bilateral agreement. The Romanian NSA explains that "there are no direct costs for ANS provided by civil ANSP to non-GAT IFR military flights as there is only a common use of infrastructure, which applies in reciprocity with military infrastructure used also for civil ANS" (see also para 67). The NSA indicates that the verification to ensure that the costs for ANS provided by the civil ANSP to non-GAT IFR military flights are excluded from the en route and terminal cost bases covered by the SES performance and charging Regulation, consist of the "NSA's regular oversight (document reviews/audits/inspections) during the Cost Bases approval process".

38 LPS: The Slovak NSA indicates that LPS provides ANS only to GAT in controlled airspace, as "non-GAT IFR military flights are not allowed in Slovak CTA – EUROAT is not applicable". LPS provides CNS (sharing of radar data) to the military and other ANS (AIS, FDP though contracts between the military and the civil provider). For MET services, the PRB understands that the indicated services are provided by the METSP (SHMÚ) and not by LPS. For SAR, the NSA indicated that the civil ANSP is operating the Rescue Coordination Centre (people, equipment), while the military is providing personnel and A/C for SAR activities (see also para 68). In respect of infrastructure and equipment, the NSA indicates that OAT is hosted in the civil ACC building and sharing the civil ATM system. LPS CNS equipment (VOR/DMEs, DMEs) is made available to all users.The Slovak NSA marked question 6 on the financing of ANS to military non-GAT flights as not applicable. The PRB understands that no military non-GAT flights are controlled by LPS and hence no costs are associated to the provision of such services.

39 ENAIRE: The Spanish NSA indicates that ENAIRE provides CNS services to non-GAT flights and that

infrastructure and equipment is made available to non-GAT traffic (including the ATC system).[21] In respect of the financing, the Spanish NSA indicates in question 6 that "OAT flights are served by the military ANSP and financed by the State. The military ANSP is an independent entity from the civil ANSP". The PRB understands from the comments provided that the costs for the CNS and equipment reported to be provided/made available by ENAIRE to non-GAT flights in questions 3 and 4 are neither quantified nor deducted from the cost bases for air navigation services under the SES.

Services and infrastructure provided by separated civil and military ANSPs

40 BULATSA: The Bulgarian NSA reports that "there is a civil ANSP (BULATSA) maintaining and operating its own infrastructure and a military provider (BUAF) maintaining and operating its separate own infrastructure. The civil ANSP maintains and operates own infrastructure for ANS provision of GAT traffic, and this infrastructure is available to OAT traffic. The NSA indicates that all the services and equipment provided to the military are "for the purpose of airspace security, civil-military coordination and cooperation, for the benefit of airspace users safety, efficiency and effective use of airspace". The NSA further clarifies that "ATC Working stations are provided for the sole purpose of situational awareness. When needed (for example due to technical failure) they are to be used by civil ATS unit for the provision of ATS. ATS units situated in BULATSA ops room provide service to all GAT IFR traffic and OAT IFR overflying Sofia FIR. Military unit has been provided with access to BULATSA ops room for the purpose of security of airspace and military-military coordination. Military ATS units provide service in TSAs from their own facilities". The Bulgarian NSA indicates that "BULATSA does not bear any additional costs related to non-GAT IFR military flights (zero marginal costs), as BULATSA does not spend any additional costs for equipment and services specifically for OAT traffic. All costs are aimed at the provision of ANS of GAT traffic". This is "verified during annual inspections done by the CAA".

41 HASP: The Greek NSA reports that "no services are provided by the civil ANSP to non-GAT IFR military flights". "There are no amounts relating to the costs for ANS provided by the civil ANSP to non-GAT IFR military flights for years 2019 to 2021 as these services are provided by HAF". The PRB understands that no military non-GAT flights are serviced by HASP and hence no costs are associated to the provision of such services.

42 HungaroControl: The NSA indicates that "the civil ANSP (HungaroControl) operates an integrated civil-military ACC, but OAT flights are controlled by the CRC[22] (Ministry of Defence) from its headquarters in Veszprém". In terms of services, the NSA reports mutual data exchange of radar under CNS and indicates that this is provided to the military free of charge. In terms of equipment, the NSA indicates that two en route PSR and SSR MODE-S radars and nine DVOR/DME stations are available to non-GAT flights. The Hungarian NSA marked question 6 as not applicable. The PRB understands that no or only a very limited number of military non-GAT flights are serviced by HungaroControl and hence no costs are associated to the provision of such services.

43 LGS: The Latvian NSA explains that LGS "is providing civil service to GAT. Military CRC (Control Report Service) is controlling all OAT flights". The NSA marked question 6 on the financing of ANS by the civil ANSP to non-GAT flights as not applicable and indicated that ANS are only provided to GAT. The NSA specifies that the Military "have their own infrastructure which is financed by state budget only". The PRB understands that no military non-GAT flights are serviced by LGS and hence no costs are associated to the provision of such services.

44 Oro Navigacija: The Lithuanian NSA reports that "the civil ANSP does not provide ATS/ATM services to non-GAT IFR military flights". The NSA explains that the services (CNS, SAR) and equipment (VOR/DMEs, DMEs, Radio coverage) marked with a cross in questions 3 and 4 are available to all users and that OAT flights might be using them. For MET services, the NSA clarifies that the "National MET services (LHMT) provide data for Air Force in accordance to their bilateral agreement (costs are not included in the cost base to civil airspace users)". The NSA marked question 6 on the financing of ANS by the civil ANSP to non-GAT flights as not

[21] The PRB understands that the reported MET services are provided by the METSP (AEMET) and not by ENAIRE.
[22] Control Reporting Centre.

applicable and indicated that there are "no services provided to OAT flights by civil ANSP and no associated additional costs".

45 **PANSA**: The Polish NSA reports that the following ANS are provided by PANSA to non-GAT flights: ATS (access to the ATM system P_21 used to manage GAT traffic is granted to positions handling OAT traffic to enable smooth and automated exchange of information), CNS (access to certain COM devices), SAR coordination (provided by a joint civil-military Aeronautical Rescue Coordination Centre, ARCC Warszawa, located in PANSA). Infrastructure and equipment made available to the military include the ATC P_21 System, and other equipment, such as a small number of VHF and UHF frequencies and the Voice Communication System in the CWP. The Polish NSA clarified that "certain elements of infrastructure or systems are made available to positions handling OAT traffic to support the integration and to minimise possible negative impact of military (OAT) traffic on airspace availability for civil airspace users" and, "for some components, the two sides, PANSA and the Military, independently finance the resources provided by each of them and the part related to the resources provided by the Military is not financed under the Performance and Charging Scheme".

46 The Polish NSA refers to the costs relating to the ARCC (SAR coordination) and to FUA, where they indicate that civil and military ANSPs are financing their own resources. These are included in the determined costs only in relation of the elements provided by PANSA. In respect of NSA verification, it indicates that the determined costs for Poland do not include elements considered as not eligible – they include only elements constituting services performed to the benefit of airspace users operating under GAT rules (supporting safety and flight efficiency of such flights).

47 The PRB therefore concludes that no costs for ANS provided to military non-GAT flights are deducted from the air navigation cost bases covered by the SES, including for the infrastructure and equipment made available to the military.

ANS infrastructure and services provided or made available by the military to en route GAT IFR flights (NSA replies to questions 7, 8, 10 and 11)

48 **Austria**: The Austrian NSA indicated the section as "not applicable". The PRB understands that the Military do not provide any services or infrastructure to en route GAT flights in Austria.

49 **Belgium**: The Belgian NSA indicates that SAR services are provided by the Military, as well as other services, including: ATCO medical screening services (in 2019 and 2023), military Wide Area Network (WAN) to provide network connection to the radio project and to the Wide Area Multilateration (WAM) project, as well as support in the domain of Human factors CISM coaching. In respect of infrastructure made available by the military, the NSA reports that the Belgian Defence provides "buildings, ATC systems (KVM switches) and radars' to skeyes", as well as MET equipment (balloons, parachutes, sondes, helium) and weather sensors. In respect of financing, the NSA specifies that SAR costs are not included in the en route cost base, while costs for the MET equipment used by skeyes are included. The NSA further indicates that the use of the WAN "is rebilled to skeyes based on the bandwidth used".

50 **Bulgaria**: The Bulgarian NSA reports that BULATSA employees of the tactical civil-military coordination unit are located in a building owned by the military at zero cost for BULATSA.

51 **Croatia**: The Croatian NSA indicates that "Croatia has no military service provider". Hence no services are reported to be provided by the Military to en route GAT flights.

52 **Cyprus**: The Cypriot NSA reports that "there are no services provided by the military to GAT IFR flights in the en route airspace" in Cyprus.

53 **Czech Republic**: ATS, CNS and MET services provided around four airports (see section 3.4 and Table 4 of the report). The NSA reports that the number of civilian GAT flights at these military aerodromes is limited. "Commercial airlines flights are at LKPD only, but very rarely".

54 **Finland**: The Finnish NSA indicated the section as "not applicable". The PRB understands that the Military do not provide any services or infrastructure to en route GAT flights in Finland.

55 **France**: The French NSA lists ATS service around four airports (see section 3.4 and Table 4 of the report) and ATC in some limited en route areas. Infrastructure includes buildings and equipment such as, ATC system (same as the one use for non-GAT), VOR/DME Service available to all traffic and ANSPs, DMEs (TACAN functionality). These

services and equipment are partially financed through the en route cost base. The NSA also mentions that SAR operations, infrastructure and manning are delegated and financially supported by the military, even when alerting service are provided by civil ANSPs.

56 **Germany**: The German NSA reports CNS services and equipment (DME/TACAN functionality), radars, MET (via data transmission into civil ATS) and SAR (provided and financed by the military in the airspace under German responsibility). The German NSA specifies that the equipment includes "11 NDBs for common use, which are also operated by the German military".

57 **Greece**: The NSA specifies that MET services for civil aviation is provided by the designated MET provider "Hellenic National Meteorological Service" (HNMS/MET), which is under the auspices of the Ministry of Defence and that SAR services within Athinai FIR/Hellas UIR are provided by the Ministry of Defence (HAF) and the Ministry of Citizen Protection (Hellenic Coast Guard), who are responsible for organising the aeronautical and maritime Search and Rescue services in a Joint Rescue Coordination Centre (JRCC) and making the necessary facilities available. Costs relating both to MET and SAR services and equipment provided by the military are included in Greece's en route cost base, although marked as "not applicable" in the questionnaire (see Table 12 and para 81 of the report).

58 **Hungary**: The NSA informed on exchange of radar data provided by three NATO PSR and SSR MODE-S radars free of charge (on a reciprocity basis). SAR services were not reported by the Hungarian NSA in the questionnaire, although costs relating to SAR services provided by the military are included in Hungary's en route cost base (see Table 12 and para 80 of the report).

59 **Ireland**: The Irish NSA informed on the use of military VOR/DME for civil IFPs. In respect of financing, the PRB understands that no costs for services or equipment provided by the military are included in the en route cost base.

60 **Italy**: The Italian NSA indicates that all ATS, CNS and MET services are provided to GAT flights "within the airspace under ITAF[23] responsibility" (Table 1, next page). ITAF also provides AIS for military airports opened to civil air traffic (see section 3.4 and Table 4 of the report). In respect of infrastructure made available by ITAF to GAT flights, mention is made of ATC system, radars and military radio navigational aids (VOR/DMEs, DMEs). ITAF also provides MET forecasts for the whole Italian airspace. Costs for services provided by ITAF are included in Italy's en route cost base (see Table 12 and para 77 of the report). The Italian NSA informs that SAR services are also provided by the military. However, the SAR costs are financed by State and are not charged to airspace users.

ITAF ATC Unit	Associated airspace	Remarks
Decimomannu	CTR Cagliari	APP service to Cagliari
Istrana	CTR Treviso	APP service to Treviso Sant'Angelo
Pisa	CTR + ATZ Pisa	APP/TWR service
Sigonella	CTR Catania	APP service to Catania and Comiso
Trapani	CTR + ATZ Trapani	APP/TWR service
Grosseto	CTR + ATZ Grosseto	APP service to Grosseto and Siena Ampugnano and TWR service
Amendola	CTR Amendola	APP service to Foggia Gino Lisa
Aviano	CTR Aviano	APP service to Udine Campoformido

Table 1 – ITAF ATC Units handling civil Aviation flights (source: LSSIP 2021 – Italy, Local single sky implementation, p.23).

61 **Lithuania**: The NSA reports that "CNS equipment owned by military at Siauliai airport is available to all airspace users and used by Oro Navigacija while providing approach and terminal services in this airport". The costs of those equipment (including DVOR/DME, and TACAN functionality) are not in cost base and "fully covered by MoD/State".

62 **Malta**: Malta NSA clarifies that "the Maltese military do not have any ANS capabilities". However, the JRCC (Joint Rescue and Coordination Centre) coordinates SAR activities within the Malta FIR which is coincident to the Malta Search & Rescue

[23] ITAF – The Italian Air Forces. In accordance with the European Community Regulation 550/2004, article 7, paragraph 5, the Italian Air Force is authorised to provide ATS, CNS and MET Services to General Air Traffic (GAT) without certification (source: LSSIP 2021 – Italy, Local single sky implementation, p.35.

Region (SRR). SAR costs are not part of Malta's en route cost base.

63 **MUAC**: The Dutch NSA reports that MUAC utilises radar data from the MUAC States, amongst others from Netherlands Military Mode S radars (see para 64 below).

64 **Netherlands**: The Dutch NSA indicates that ATS, CNS and MET services are provided by the military in CTR, TMA and CTA (see section 3.4 and Table 4 of the report). In respect of equipment, five military radars linked to RADNET and six TACAN beacons used as GBAS are owned by the military and used for GAT flights. Costs for military ATS services and use of military infrastructure are not charged to the civil users.

65 **Norway**: SAR services are provided by the 330th Squadron, which is a helicopter unit of the Royal Norwegian Air Force. SAR costs are not part of Norway's en route cost base.

66 **Poland**: The Polish NSA reported that "only SAR coordination, not SAR itself" is provided by the military. "Coordination of SAR in FIR Warszawa is provided by a joint civil-military Aeronautical Rescue Coordination Centre (ARCC Warszawa) located in PANSA, which is a body responsible for planning, coordination of, and supervising search and rescue operations that are carried out by mobile ASAR units within the entire WARSZAWA FIR. ARCC (SAR coordination) is composed of people employed by PANSA and people employed by the Military. The two sides independently finance the resources provided by each of them and the part related to the resources provided by the Military is not financed under the Performance and Charging Scheme".

67 **Romania**: The Romanian NSA reports "civil-military radar information exchange based on bi-lateral agreement". The PRB understands from the answer to question 6 of the questionnaire that these services are free of charge (on a reciprocity basis, see also para 37).

68 **Slovakia**: The Slovak NSA indicated that the military provides personnel and aircraft for SAR activities. The PRB understands that the SAR costs included in the en route cost base are related to services provided by LPS and not by the military.

69 **Slovenia**: The Slovenian NSA indicates that there are no military ANSPs providing services to GAT. However, some civil surveillance equipment is located a plot of land owned by the MoD. No costs relating to services or equipment provided by the military to GAT are included in the en route cost base.

70 **Spain**: The Spanish NSA did not provide detailed information on the services and infrastructure provided by the military to GAT but referred to the Spanish RP3 performance plan. The RP3 performance plan for Spain includes the Spanish Air Force (EA[24]) in the list of entities covered by the plan, as ANSP (ANSP EA) and as NSA (NSA EA). Costs for the Spanish Air Force are included in the two en route cost bases for Spain (Spain Continental and Spain Canarias) (see Table 12 and para 78 of the report). In respect of ANSP EA, costs are recorded for ATM, CNS and SAR. NSA EA presents supervision costs. The Spanish NSA clarified that regarding ATM services, "military ANSP provides en route and approach service in Zaragoza TMA, and approach service for traffics in and out LEMI (Murcia Internacional)" and CNS and SAR services "are provided in the entire airspace under the responsibility of Spain (Spain Continental and Spain Canarias)".

71 **Sweden**: The Swedish NSA reports that the military provide a communication network used by LFV. They also provide MET services at the two combined civil/military airports used for both OAT and GAT flights (see section 3.4 and Table 4 of the report). As far as equipment is concerned, LFV has equipment installed in many military sites and contingency solutions in military buildings for both GAT/OAT (including for the ATC system). At both military and combined civil/military airports the military provide all equipment besides radar for ATS purposes. The NSA indicates that costs for the use of the military communication network are included in the en route cost base.[25]

72 **Switzerland**: The Swiss NSA indicated the section as "not applicable" and explained that the military

[24] Ejército del Aire.

[25] The Swedish NSA indicated in the questionnaire that the determined costs for the use of the military communication amounts to 600K€ per year but marked "not applicable" for actual costs. The PRB understands that such costs are actually incurred and should also be reported as actual costs.

do not provide any services for GAT IFR in the en route airspace.

Costs for ANS provided by the military included in the en route cost bases

73 **Belgium:** The military costs included in Belgium-Luxembourg's en route charging zone correspond to the costs of MET equipment used by skeyes and represent 0.1% of Belgium-Luxembourg en route actual costs in 2021. SAR costs are not included in the en route cost base.

74 **Italy**: The military costs included in Italy's en route cost base are those of ITAF (60). These are reported as a separate entity in the en route reporting tables and represented 8% of the en route actual costs in 2021. In respect of the methodology used for calculating the determined/actual costs for ANS provided by the military to GAT IFR flights which are included in the en route cost base, the NSA indicates that determined/actual costs "are attributed to civil aviation globally for the resources acquired for their exclusive needs and pro-rata percentage for the resources acquired for common needs, mainly dividing them using the traffic data managed in the year". The PRB understands that ITAF provides MET services in the entire en route charging zone of Italy (MET costs account for half of the ITAF costs reported for the en route cost base), however, the geographical scope for the ATM/CNS costs is unclear and not provided in the RP3 performance plan or in the additional information to the reporting tables. The PRB assumes that the geographical scope is related to the airspace around military aerodromes used also for GAT flight (see section 3.4 and Table 4 of the report) and that a portion of the related approach costs is allocated to the en route charging zone. For the sake of transparency, the PRB recommends that Italy describes the services provided by ITAF and their allocation methodology between en route and terminal in the appropriate sections of the additional information to the en route reporting tables.

75 **Spain**: The military costs included in Spain's cost bases (Continental and Canarias) are those of the Spanish Airforce - EA (para 70). These are reported as separate entities in the en route reporting tables (ANSP-EA and NSA-EA) and represented 6% of the en route actual costs in 2021. In respect of the methodology used for calculating the determined/actual costs for ANS provided by the military to GAT IFR flights which are included in the en route cost base, the NSA indicates to refer to Spain's RP3 performance plan. The PRB understands that SAR costs in the en route charging zones of Spain are entirely provided by ANSP-EA (they account for around 45% of the EA-ANSP costs reported for the en route cost bases). The Spanish NSA clarified that regarding ATM services, "military ANSP provides en route and approach service in Zaragoza TMA, and approach service for traffics in and out LEMI (Murcia Internacional)" and "CNS services are provided in the entire airspace under the responsibility of Spain (Spain Continental and Spain Canarias)".

76 **France**: the military costs included in France's en route cost base (and recorded as part of DSNA costs in the reporting tables) correspond to a portion of ATS services around four airports (see section 3.4 and Table 4 of the report) and ATC in some limited en route areas, including buildings and equipment. They account for 1% of France's en route actual costs in 2021. In respect of the methodology used for calculating those costs included in the en route cost base, the French NSA indicated that, for the services around the four airports, a cost base relying on similar costs for civil airports, which is then allocated between the en route and terminal charging zones according to DSNA's cost allocation methodology.

77 **Hungary**: The military costs included in Hungary's en route cost base relate to SAR. These are reported as a separate entity in the en route reporting tables and represent 2% of Hungary's en route actual costs in 2021.

78 **Greece**: The military costs included in Greece's en route cost base relate to SAR and MET. These are reported as two separate entities in the en route reporting tables and represent 14% of Greece's en route actual costs in 2021 (SAR accounted for 8% and MET for 6%).

79 **Sweden:** The military costs included in Sweden's en route cost base correspond to the costs of the communications network used by LFV and represent 0.3% of Sweden's en route actual costs in 2021. These are recorded as part of LFV's costs in the en route cost base.

80 The other States have not reported any costs for services or equipment provided by the military and included in their en route cost bases. The PRB notes that in some instances, the services and

equipment are provided on a reciprocity basis and compensated by the services provided by the civil ANSPs to non-GAT flights (e.g., Romania).

5.3 ANS costs for Implementation and operation of FUA

81 The received questionnaires have not provided clear answers for all Member States regarding the FUA implementing and operating costs. Some Member States mixed the FUA costs with costs incurred by ANSP for ATM/ANS service provision to military OAT or exempted flights or induced by the impact of military activities. There is a link between OAT flights and FUA concept in that the reserved FUA airspace structures provide safety operational layer for especially military training and operational flights. The provision of the ASM function with FUA is considered a functional system, including people, procedures, and systems. When looking into costs associated with implementing FUA, it is expected to receive costs data related e.g. labour, training, real estate, infrastructure, system procurement, installations, and service to maintain all three ASM levels.

82 Austria, Greece, Lithuania, Slovakia, Malta, Cyprus and Slovenia have reported no FUA costs incurred by the ANSP, some of them because of costs being paid by the Member State or servicing low number or no national OAT IFR flights.

83 Belgium does not separate FUA costs from other costs. Skeyes operates co-located civil military coordination aiming at full integration by 2030. The Belgian NSA clarified that Belgium has a civil-military AMC staffed by civil and military personnel and that no billing takes place from civil to military or vice versa.

84 According to the questionnaire, Bulgaria performs co-located civil military coordination and identified investment costs related to the CIMACT system and minor operating costs. The Bulgarian NSA clarifies that the part of the costs borne by BULATSA are included into the cost base.

85 Croatia does not record FUA costs separately. The civil-military costs including FUA are born individually by the respective domain. It is therefore estimated that the civil part of the FUA costs financed by Croatia Control is included in the cost base. No details are available.

86 Provision of ASM function based on the FUA concept in the Czech Republic is considered an integrated process provided by ANS CR with direct participation of military stakeholders. The total costs related to all ASM levels are included in the route charges justified by benefits for all airspace users.

87 Finland provides integrated ASM function based on the FUA concept to civil and military stakeholders. Fintraffic ANS includes total AMC related costs to the cost base. It is not clear whether the costs related to ASM L1 and ASM L3 are also included.

88 France performs co-located civil-military coordination including ASM/FUA tasks. The tasks are executed by joint AMC and dedicated coordination civil and military units. The FUA costs per civil part are included in the cost base.

89 Germany indicates that “there are a number of agreements between the German Armed Forces or the German Military Aviation Authority on one side and DFS and/or MUAC on the other side to address and allocate operational and infrastructure costs of FUA-implementation. In application of these arrangements, costs are shared between the civil (Enroute ANS charges) and the military (federal budget) side. This cost sharing agreement is periodically re-viewed by a civil-military expert group to adapt / adjust the sharing mechanism and to ensure a none-impact on the ANSPs en-route cost base due to military requirements”.

90 Hungary provides integrated ASM function based on the FUA concept. The NSA reported the ASM activities to be a part of the daily ATM/ANS operations without any further incremental costs. Without further details, it is assumed that the FUA related costs are included in the cost base.

91 Ireland did not fill in the section of the questionnaire on FUA.

92 Italy provides separated civil-military ANS. The NSA reported the ENAV does not register the FUA costs separately from other operational costs. The NSA stated that the costs are allocated proportional along the cost centres referred to en route services. The explanation, however, does not provide for the cost structure description, values or further explanation. It is assumed that the costs are included in the cost base.

93 Latvia provides for separated civil-military ANS. The NSA report does not seem to refer to the FUA cost rather to costs related to traffic and

exempted military flights. It is not possible to perform analysis without further details.

94 MUAC provides integrated ANS function including ASM to Belgium, Luxembourg, Germany, and Netherlands. MUAC signed a contract for the provision of FUA service in the Netherlands. Belgium and Germany provide ASM functions based on the FUA concept by the national ANSPs.

95 The Netherlands signed a contract with MUAC for the provision of FUA service in the Netherlands. The Netherlands pays the full cost for the FUA cell at MUAC. The detailed cost structure including e.g., ASM L1 and ASM L3, operating and maintenance costs for the FUA relevant infrastructure based in the Netherlands is not clear.

96 Norway does not register the FUA costs separately from other service provision costs. The NSA reported figures that include military activities, traffic separation, airspace design, advisory services etc. without further details which makes it difficult to evaluate the FUA only costs. Without further details it is assumed that the FUA costs are included in the cost base of the ANS service provision.

97 Poland identifies FUA costs as those related to performance of all three ASM levels. PANSA operates joint civil-military AMC and supporting systems paid separately by civil and military stakeholder. Civil part of the FUA cost is assumed to be part of the cost base.

98 Romania has reported operating collocated ASM functions with FUA. The NSA stated that there are no costs associated to FUA implementation and application. No further details nor figures have been provided. It is not clear how the ASM levels and infrastructure are financed, and costs split between civil and military stakeholders.

99 Spain provides co-located ASM function with FUA. Civil part of the FUA cost is reported to be part of the cost base without further details regarding the structure and value. The NSA added that “military costs regarding the implementation and operation of FUA are not included in the cost base and therefore financed by the State”.

100 Sweden has an integrated civil/military service. “The economic burden for the integrated service is treated through allocation keys and agreements, and financed by Route charges (civilian part) and budget (military part)”.

101 Switzerland provides separated ANS services and ASM function with FUA. The NSA reported figures for the FUA cost and indicates that “FUA is almost entirely a human factor. Hardware and software costs are negligible”.

102 Table 2 (next page) summarises the information from the NSA reports to the questionnaires regarding the FUA costs included in the en route cost bases. “No cost” refers to answers stating that no FUA costs have been identified. “State” means that the FUA cost are fully covered by the Member State. “Civil part” and “Both” means that refers to the part recovered from route charges.

Member State	Organisation for the provision of ANS between civil and military	Inclusion of FUA costs in the en route cost bases
Austria	Co-located	No costs
Belgium	Co-located	Civil part
Bulgaria	Separated	Civil part
Croatia	Integrated	Civil part
Cyprus	Integrated	State
Czech Republic	Integrated	Both
Finland	Integrated	Both
France	Co-located	Civil part
Germany	Integrated	OAT and FUA
Greece	Separated	State
Hungary	Separated	?
Ireland	Co-located	?
Italy	Co-located	Both
Latvia	Separated	?
Lithuania	Separated	No costs
Malta	Integrated	No costs
Netherlands	Co-located	Both
Norway	Integrated	Both
Poland	Separated	Civil part
Romania	Co-located	No costs
Slovakia	Co-located	State
Slovenia	Integrated	No costs
Spain	Co-located	Civil part
Sweden	Integrated	Both
Switzerland	Integrated	Both

Table 2 – Civil-military ANS provision organisation and recovering the FUA costs from route charges. (source: PRB elaboration of the NSA responses).

5.4 ANS Costs for services provided to exempted Military GAT IFR flights

103 The actual costs for services provided to en route exempted GAT military flights in 2019-2021 and the amounts financed in respect of these costs, as reported by the NSAs in questions 14 and 15, are presented in Table 3.

State	Actual costs for exempted military flights (in M) Question 14			Amounts financed in respect of exempted military flights (in M) Question 15		
	2019	2020	2021	2019	2020	2021
Austria	0.5	0.3	0.4	0.5	0.3	0.4
Belgium	0.8	2.0	2.0	0.8	2.0	2.1
Bulgaria	1.6	3.3	2.8	1.6	3.3	2.9
Croatia	0.7	1.7	0.2	N/A, State confidential		
Cyprus	None			None		
Czech Republic	36	43	44	36	43	44
Finland	50	25	35	49	23	35
France	5.7	14.4	11.5	5.7	14.4	11.5
Germany	1.7	1.8	1.8	1.7	1.8	1.8
Greece						
Hungary	248	528	487	299	238	248
Italy	9.6	7.6	7.7	9.6	7.6	7.7
Latvia	0.2	0.1	0.2	N/A		
Lithuania				0.1	0.1	0.2
Malta	Not available			Not available		
Netherlands						
Norway	32.3	-	-	32.3	-	-
Poland	5.8	7.2	7.6	5.8	7.2	7.6
Romania	5.5	7.3	8.6	5.5	7.3	8.6
Slovakia	0.6	0.5	0.5	0.6	0.5	0.5
Slovenia	-	-	-	0.1	0.0	0.1
Spain	4.5	3.3	3.0	4.5	3.2	3.0
Sweden	22.5	46.8	32.2	4.5	6.3	6.2
Switzerland	Not available			Not available		

Table 3 – Costs for en route exempted military flights in million national currency (source: PRB elaboration on the questionnaire).

104 The PRB analysis of the reported amounts and the explanations provided by the NSAs on the financing of the costs for exempted military GAT flights in question 15 are summarised below for each individual State.

105 **Austria**: The Austrian NSA reports that the amounts financed in relation to exempted military GAT flights are calculated by the CRCO (based on the unit rate and the actual service units for exempted military GAT flights, (Formula 2) and invoiced to the Ministry of Defence.

106 **Belgium-Luxembourg**: The Belgian NSA reports amounts financed in relation to exempted military GAT flights in question 15, which correspond to the determined costs for exempted military flights

reported under question 14. The PRB understands that these amounts are calculated based on Formula 1 applied to the determined costs of the Belgian entities for the en route charging zone of Belgium-Luxembourg. In respect of the financing, the NSA indicates that these "costs incurred for services provided to exempted flights are financed by the Belgian State".

107 **Bulgaria**: The Bulgarian NSA reports amounts financed in relation to exempted military GAT flights in question 15, which are calculated "based on the ratio of the actual service units related to the exempted military flights and total service units for the same year, taking into account BULATSA costs only", i.e. applying the Formula 1. In respect of the financing, the NSA indicates that these are "settled on a multiannual basis" and financed from the following sources: Eurocontrol internal tax and "amounts from the state where dividend owed to the state was determined by the state at a rate lower than 100%". The PRB understands that there is no direct annual reimbursement by the State of BULATSA costs incurred for ANS to exempted military flights and that the costs incurred by BULATSA in respect of these flights are indirectly covered by the State through a portion of the en route charges collected by BULATSA on behalf of the State but kept by the BULATSA. The PRB also notes that Bulgaria does fill in the section of the additional information relating to the "description of the policy on exemptions and description of the financing means to cover the related costs".[26]

108 **Croatia**: The Croatian NSA has not reported any amounts financed in relation to exempted military GAT flights in question 15 and has indicated that this information is "State confidential". The PRB notes that the amounts reported by the NSA in question 14 are calculated using Formula 1. In respect of the financing, the NSA indicates that these are financed by the "State budget for the exempted military flights".

109 **Cyprus**: The Cypriot NSA has not reported any amounts financed in relation to exempted military GAT flights in question 15 but indicated that "these are financed through the State budget – no extra costs for providing services to military flights are foreseen in the PP". The PRB understands that the revenue from en route charges in Cyprus is collected by the State, which in turn finances DCA Cyprus.

110 **Czech Republic**: The amounts reported by the Czech NSA in question 15 are the same as those reported as actuals in question 14. The NSA explains that the determined costs reported in question 14 correspond to the "State budget subsidy to cover the cost of the exempt flights concerned for the particular year", while the actual costs reported in question 14 are the "actual amount of the subsidy after clearance". The NSA confirms that "exempted military flights are financed through state budget". The PRB notes that this financing is reflected in ANS CR annual accounts.[27]

111 **Finland**: The Finnish NSA reports amounts financed in relation to exempted military GAT flights in question 15, which are similar to those reported as actuals in question 14., in line with the PRB computations of Formula 2. The Finnish NSA explains that "Fintraffic ANS has a contract with Finnish Airforce to cover the cost of military GAT flights".

112 **France**: The French NSA reports amounts financed in relation to exempted military GAT flights in question 15, which are roughly equivalent to 70% of the PRB computation of Formula 1. The NSA did not indicate in question 15 how these costs are financed. The PRB notes that France reports in the additional information relating to the "description of the policy on exemptions and description of the financing means to cover the related costs"[28] that "exempted flights are financed through the general budget of the Direction Générale de l'Aviation Civile (DGAC)".

113 **Germany**: The German NSA indicates that the amounts financed in relation to exempted military GAT flights are calculated using the "flight-related billing using the published unit rate", i.e. Formula 2. The PRB understands that these amounts relate only to the part of the unit rate relating to DFS (and not to MUAC, the METSP or the NSA). In respect of the financing, the NSA reports that these "charges for exempted flights are reimbursed by the German Ministry of Defence to the ANSP".

[26] Item b) of the additional information to reporting tables 2 on the unit rate calculation.
[27] ANS CR Annual Report 2019 p. 109.
[28] Item b) of the additional information to reporting tables 2 on the unit rate calculation.

114 **Greece**: The Greek NSA has not reported any amounts financed in relation to exempted military GAT flights in question 15. The NSA has also not reported any determined or actual costs for exempted military flights in question 14. In respect of financing, the NSA explains that "costs are financed through the Government Budget and are not charged to airspace users. However, due to the organizational structure of HASP, HASP is not compensated for the provision of these services and all relevant costs are not calculated and neither billed nor charged by HAPSP to the State". The PRB understands that the revenue from en route charges in Greece is collected by the State, which in turn finances HASP.

115 **Hungary**: The amounts reported by the Hungarian NSA in question 15 differ from those reported as actuals in question 14. The additional information provided to the reporting tables[29] of the Hungarian cost base indicates that the costs financed in respect of exempted flights are based on "actual costs and the rate of exemptions". The additional information also specifies that "a governmental decision was passed in 2010 to arrange the financing of the exempted flights from the annual state budgets" and that "costs of exempted flights are covered by the relevant Ministries (based on exemption codes) in year n+2". The NSA confirms in question 15 that the "cost of exempted military flights are financed by the Ministry of Defence in n+2".

116 **Ireland**: The Irish NSA has not reported any amounts financed in relation to exempted military GAT flights in question 15, nor any information on the means of financing costs for exempted military flights. The NSA has also not reported any determined or actual costs for exempted military flights in question 14. The PRB notes that the additional information provided to the reporting tables of Ireland's cost base indicates that the funding of the exempted flights "is provided by the State" but does not present any amounts for exempted IFR flights.

117 **Italy**: The amounts reported by the Italian NSA in question 15 are the same as those reported as actuals in question 14. The PRB notes that these amounts are in line with the PRB computations based on Formula 2. The NSA indicates that, "for GAT military IFR flights Italy applies Regulation (EC) 2019/317 and the Italian Interdepartmental Decree of 28-12-2007. The exempted service is reimbursed by the Italian State".

118 **Latvia**: The Latvian NSA has not reported any amounts financed in relation to exempted military GAT flights in question 15 but has reported actual costs for exempted military flights in question 14. The PRB understands that these costs are computed on the basis of Formula 2. The NSA indicates that "the exemptions are currently financed (reimbursed to ANSP) through the difference between the Eurocontrol costs included in en-route reporting tables and actual payables." The PRB understands that the costs for services to exempted flights are indirectly covered by the State through a portion of the en route charges collected by LGS on behalf of the State but kept by LGS.

119 **Lithuania**: The Lithuanian NSA reports amounts financed in relation to exempted military GAT flights in question 15, which are in line with the amounts computed by the PRB under Formula 2. The NSA explains that the CRCO calculates en route and terminal charges of exempted military flights and submits data to Lithuania on ETNA. Invoices are issued by Oro Navigacija to Air Force / MoD in line to submitted data.

120 **Malta**: The Maltese NSA has not reported any amounts financed in relation to exempted military GAT flights in question 15, nor any information on the means of financing costs for exempted military flights. The NSA has also not reported any determined or actual costs for exempted military flights in question 14, indicating that such information in "not available". The PRB notes that the additional information provided to the reporting tables of Malta's cost base indicates that "the Maltese Government reimburses MATS for the costs related to exempted flights through a long-term agreement". The PRB finds it unclear how such agreement applies in the absence of available amounts.

121 **Netherlands**: The Dutch NSA has not reported any amounts financed in relation to exempted military GAT flights in question 15, nor any information on the means of financing costs for exempted military flights. The NSA has also not reported any determined or actual costs for exempted military flights in question 14, indicating that "all military

[29] Item b) of the additional information to reporting tables 2 on the unit rate calculation.

flights are exempt from en route charges. As military flights use civil services only occasionally, they are not administered separately from other exempt flights. Therefore, data is not available on determined and actual costs specifically for military flights". For MUAC, the Dutch NSA indicates that "MUAC provides integrated civil military ATS services, therefore exemption of military flights is not applicable".

122 The PRB notes that the additional information provided to the reporting tables of the Netherlands en route cost base indicates that "in line with Article 31, a financial compensation is provided by the State for the services provided to the exempted flights in the Amsterdam FIR".[30] The PRB understands that the amounts provided in the additional information for all IFR exempted flights together are calculated on the basis of Formula 2 and on the basis of the unit rates for the entire charging zone, i.e. also including MUAC.

123 Norway: The Norwegian NSA only reported amounts financed in relation to exempted military GAT flights for year 2019 in both questions 14 and 15 and reported 0 for 2020 and 2021. The amounts reported for 2019 in questions 14 and 15 are also the same as reported as FUA costs in question 12 and reported as costs for ANS provided by the civil ANSP to non-GAT IFR in question 6. The PRB understands that these amounts relate to the costs of FUA and to the costs of ANS provided by Avinor to military non-GAT flights (see para 19) and not the costs of ANS provided to exempted GAT military flights.

124 The Norwegian NSA indicated in the answer to question 6 that "Avinor ANS invoices the military for A-B flights (approx. 6,5 MNOK) according to the same principles as for the civil airspace users". The PRB understands that these related to the costs for services to exempted military flights and that those costs, which were covered by Avinor AS through commercial income until 2019 are now billed to the Norwegian military since 2020. The PRB also understands that the amounts reported in the additional information for all exempted flights are calculated according to Formula 2. The PRB however notes discrepancies between the NSA answers to the questionnaire and the additional information in respect of the source(s) of financing of the costs for exempted IFR flights.

125 Poland: The Polish NSA indicates that the amount presented in question 15 represent the "equivalent to air navigation charges that would be paid by the users for these flights if these flights were not exempted (product of the number of service units generated by military flights subject to exemption from the charges and the unit rate of charge)", i.e. applying Formula 2. The NSA clarifies that the amounts reported are higher than the amounts computed by the PRB under Formula 2 due to the "fact that the amounts subject to the subsidy are calculated based on internal PANSA systems which provide greater details on exempted military flights than the data provided by the CRCO".

126 In respect of the financing, the NSA reports that the "costs of providing air navigation services to exempted military flights are covered by the State budget – they are financed by the means of budgetary subsidy granted by the minister responsible for transport on the application of designated service provider".

127 Romania: The amounts reported by the Romanian NSA in question 15 are the same as those reported as actuals in question 14. The PRB notes that these amounts are in line with the PRB computations based on Formula 2. In respect of the financing, the NSA reports that the "costs of the exempted flights have been billed by ROMATSA to the Romanian Ministry of Transport and Infrastructure".

128 Slovakia: The amounts reported by the Slovak NSA in question 15 are the same as those reported as actuals in question 14. The PRB notes that the amounts are in line with the PRB computations based on Formula 2 for 2019 but are lower than the PRB computations for 2020 and 2021. The PRB understands that for these two years, only the costs of the ANSP have been considered. The NSA reports that the costs are covered by a "State subsidy for financing costs related to exempted flights".

129 Slovenia: The amounts reported by the Slovenian NSA in question 15 are in line with the PRB computations based on Formula 2. In respect of the financing, the NSA specifies that the costs are "covered by the ministry responsible for defence

[30] Item b) of the additional information to reporting tables 2 on the unit rate calculation.

(MoD) for the exempted military flights. The MoD also covers the costs for all other exempted flights if the flights are operated by military aircraft".

130 Spain: The Spanish NSA indicates that the amounts reported in question 15 are calculated based on Formula 2 for "the complete unit rate of all organizations contributing to the cost base. The amounts reported by Spain represents the portion of the exempted flights financed by the State related to military flights".

131 Sweden: The Swedish NSA indicates that the amounts financed in relation to exempted military GAT flights are calculated using Formula 2. The PRB understands that these amounts relate only to the part of the unit rate relating to LFV (and not to ACR, ARV SDATS, the METSP or the NSA). In respect of the financing, the NSA indicates that "all exempted flights are financed by the State according to the unit rate each year. A large part of this is for military exemptions". The NSA also clarifies that "LFV only, receives State compensation for exempted flights".

132 Switzerland: The Swiss NSA has not reported any amounts financed in relation to exempted military GAT flights in question 15 and indicated that these figures are "not available as all costs related to exempted flights are booked together (Civil and Military)". The NSA confirmed that "All exempted flights (military and civilian) are fully financed by the Swiss Confederation". The Swiss NSA further clarifies that "exempted military flights refer only to foreign military flights. The exempted national flights are part of the service level agreement".

6 PRB COMPUTATIONS OF THE AMOUNTS TO BE FINANCED BY THE STATES IN RESPECT OF ANS PROVIDED TO EXEMPTED GAT MILITARY FLIGHT

133 For the computations of amounts based on Formula 1, the PRB has used the actual costs for each charging zone and the proportion of service units for military exempted flights on the total service units for the charging zone from the CRCO data (Annex, Section 4).

134 For the computations of amounts based on Formula 2, the PRB has used the national unit rates applied for each charging zone from the RP2 and RP3 reporting tables and the actual service units for exempted military flights as reported by the CRCO (Annex, Section 4). The differences between the PRB computations and the amounts reported by the NSAs, if small, may be due to the fact that States are using the global unit rate (including the administrative unit rate), or the monthly adjusted unit rates.

135 The PRB computations of the amounts to be financed by the States in respect of ANS provided to exempted GAT military flight are shown in Table 4 (next page).

Member States	Amounts reported in question 15			PRB computation Formula 1			PRB computation Formula 2			Formula applied in question 15
	2019	2020	2021	2019	2020	2021	2019	2020	2021	
Austria	464	342	411	444	665	699	464	342	411	F2
Belgium-Lux-	797	2,032	2,087	886	2,134	2,114	786	978	1,128	F1, DC
Bulgaria	1,650	3,315	2,941	1,679	3,562	2,977	1,850	1,809	1,931	F1, DC BULATSA
Croatia	N/A, State confidential			786	1,790	1,642	804	798	1,231	?
Cyprus	None			575	1,453	1,038	691	504	479	?
Czech Republic	36,172	42,844	43,723	39,633	90,646	68,130	36,237	42,743	44,147	F2
Denmark *				3,041	8,348	7,874	3,285	3,661	3,518	?
Estonia *				29	55	61	26	27	36	?
Finland	49	23	35	42	44	61	49	23	35	F2
France	5,685	14,352	11,529	8,408	20,380	16,151	8,359	7,679	8,060	F1, 70%
Germany	1,745	1,770	1,837	1,871	4,524	3,995	2,025	2,043	2,227	F2, DFS
Greece				1,862	3,493	2,395	2,416	2,527	2,115	?
Hungary	299,494	238,488	247,785	255,949	552,819	500,864	250,757	245,904	309,179	F1, adjusted
Ireland				969	1,749	1,377	1,105	817	912	?
Italy	9,588	7,599	7,715	7,882	16,758	12,843	9,567	7,582	7,682	F2
Latvia	N/A			141	226	188	155	137	159	?
Lithuania	144	147	165	131	233	206	145	146	165	F2
Malta	Not available			677	1,575	1,285	659	846	862	?
Netherlands				2,116	4,876	4,301	1,713	1,997	2,008	?
Norway	32,272	-	-	7,381	11,569	11,065	6,545	6,693	7,492	?
Poland	5,825	7,165	7,607	4,652	9,699	6,623	4,839	5,259	5,297	F2
Portugal*				968	1,905	1,802	675	975	1,258	?
Romania	5,506	7,256	8,571	6,415	14,782	13,257	5,434	7,247	8,574	F2
Slovakia	574	493	527	568	1,143	819	572	553	590	F2, ANSP
Slovenia	59	35	56	53	77	93	57	33	56	F2
Spain	4,540	3,160	3,045	4,328	8,746	6,596	4,850	3,298	3,224	F2
Sweden	4,100	2,600	4,000	5,837	11,052	11,179	5,429	3,488	5,250	F2, LFV
Switzerland	-	-	-	86	264	295	100	92	149	?

Table 4 – PRB computations of the Amounts to be financed by the States in respect of en route ANS provided to exempted GAT military flight in '000 national currency (source: PRB elaboration).