

# 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<sup>1</sup> apply to the provision of air navigation services (ANS) for general air traffic (GAT) in the SES Member States.<sup>2</sup> 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 users<sup>3</sup> by the Air Navigation Service Providers (ANSPs) in the SES Member States, as required by the service provision Regulation<sup>4</sup> and the performance and charging Regulation;<sup>5</sup>
  - 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 8<sup>th</sup> March 2023. NSAs were requested to send their replies by 25 April 2023. The replies to 26 questionnaires are considered in the study.<sup>6</sup> Three NSAs had not sent their replies by the time of completing the study (Annex, Section 3).
- 7 To complement 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 31<sup>st</sup> July and 28<sup>th</sup> September.

<sup>1</sup> Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the Single European Sky.

<sup>2</sup> The EU Member States, as well as Norway and Switzerland.

<sup>3</sup> Focussing on the costs relating to the en route charging zones.

<sup>4</sup> 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.

<sup>5</sup> Performance and charging Regulation (EU) 2019/317 Article 24 (1).

<sup>6</sup> 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.<sup>7</sup> 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.<sup>8</sup>

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.<sup>9</sup>
- 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.<sup>10</sup>
- 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.<sup>11</sup>

- 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”.<sup>12</sup> 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.<sup>13</sup>
- 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.<sup>14</sup> 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

<sup>7</sup> Article 1(2) of Regulation (EC) 549/2004 on the organisation and use of the airspace in the Single European Sky (the framework Regulation).

<sup>8</sup> Statement by the Member States on military issues related to the Single European Sky, 31.3.2004.

<sup>9</sup> Regulation (EC) 549/2004 laying down the framework for the creation of the Single European Sky.

<sup>10</sup> Regulation (EC) No 550/2004 on the provision of air navigation services in the Single European Sky.

<sup>11</sup> Regulation (EC) No 551/2004 on the organisation and use of the airspace in the Single European Sky.

<sup>12</sup> Regulation (EC) No 552/2004 on the interoperability of the European Air Traffic Management network, repealed by 2018/1139.

<sup>13</sup> 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.

<sup>14</sup> 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.<sup>15</sup>

- 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.<sup>16</sup>
- 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.<sup>17</sup>
- 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.<sup>18</sup> 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.<sup>19</sup> 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”.<sup>20</sup> 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).

<sup>15</sup> 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.

<sup>16</sup> Regulation (EC) No 2150/2005 laying down common rules for the flexible use of airspace.

<sup>17</sup> 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.

<sup>18</sup> Regulation (EU) 2021/116 on the establishment of the Common Project One.

<sup>19</sup> Regulation (EC) 549/2004, whereas 4) and Article 1(3).

<sup>20</sup> Aircraft used in military, customs and police services.

- EUROCONTROL Publication for harmonised Rules for OAT under IFR inside controlled Air-space 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.

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<sup>21</sup> 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.<sup>22</sup>
- 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.<sup>23</sup>

- 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

<sup>22</sup> EASA Basic Regulation, Annex VIII (section 3.2) and as required by CP1 (AF3).

<sup>23</sup> 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<sup>24</sup>) 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)<sup>25</sup>, 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.<sup>26</sup> 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.

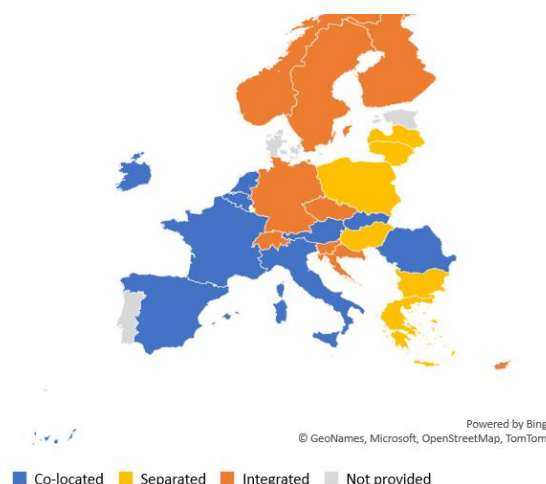


Figure 1 – Geographical distribution of civil military ANS provision organisation after PRB adjustments (source: PRB elaboration on the NSA responses. Note: MUAC not depicted).

- 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).<sup>27</sup> 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).

<sup>24</sup> 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.

<sup>25</sup> Currently the Flight Plan processing system (IFPS) used by the Network Manager (NM) does not process pure OAT flights.

<sup>26</sup> 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/](http://eda.europa.eu/) and [www.globalfirepower.com/](http://www.globalfirepower.com/)).

<sup>27</sup> LSSIPs and ANSPs websites.

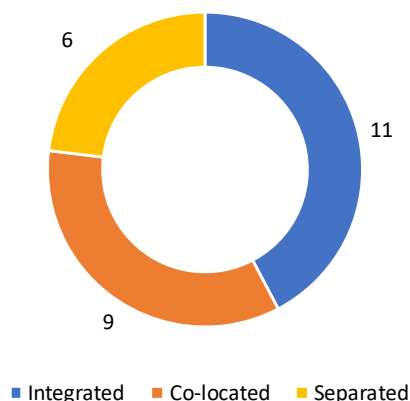


Figure 2 – Distribution of civil military ANS provision organization after PRB adjustments (source: PRB elaboration on the NSA responses).

### 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 <sup>28</sup>
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).

<sup>28</sup> 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);<sup>29</sup> 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.<sup>30</sup>

51 The costs for the services provided to en route GAT are charged to airspace users.<sup>31</sup> 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).<sup>32</sup>

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.<sup>33</sup> For this, both the determined and actual costs must be allocated in a transparent way to the charging zone(s) concerned.<sup>34</sup>

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.<sup>35</sup>

### 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).<sup>36</sup> 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.

<sup>29</sup> Or the integrated civil-military ANSP.

<sup>30</sup> Article 1(2) and 1(5)(b) of the performance and charging Regulation.

<sup>31</sup> Terminal ANS as well, under certain conditions.

<sup>32</sup> Throughout the report, the military refers to the military in his role of service provider or airspace user primarily involved in OAT activities.

<sup>33</sup> Doc 9082 ICAO's Policies on Charges for Airports and Air Navigation Services, section III, para. 5.

<sup>34</sup> Articles 22(5) and 23 of the performance and charging Regulation.

<sup>35</sup> Articles 22, 22(7), and 30 of the performance and charging Regulation.

<sup>36</sup> 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<sup>37</sup>, MET<sup>38</sup> services to military non-GAT flights, as well as, for some of them, SAR and other ANS such as AIS/AIM<sup>39</sup> (Table 5). They also own a large part of the equipment used by both civil and military users (Table 6).

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

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

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

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,

<sup>37</sup> Communication, Navigation, Surveillance.

<sup>38</sup> Meteorology.

<sup>39</sup> 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).

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

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

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

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<sup>40</sup>, ROMATSA, and ENAIRES 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 ENAIRES, 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

<sup>40</sup> 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).

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

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

ANSP	Equipment					
	Building(s)	ATC system	Radars	VOR/DMEs	DMEs	Other equipment
BULATSA	x	x	x	x	x	x Various
HASP						
HungaroControl			x	x		
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							En route cost
	ATS	CNS	MET	SAR	Other ANS	Building(s)	ATC system	Radars	VOR/DMEs	DMEs	Other equip-		
Belgium				X	X	X	X	X			X	Y	
Bulgaria						X							
Czech Republic	X	X	X										
France	X			X		X	X	X	X	X		Y	
Germany		X	X	X				X		X	X		
Greece			X	X								Y	
Hungary		X		<b>X</b>				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				Y	
Sweden		X	X			X	X				X	Y	
<b>Total</b>	<b>5</b>	<b>9</b>	<b>6</b>	<b>11</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>3</b>	<b>7</b>	

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).<sup>41</sup>

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%
<b>8 States</b>	<b>114</b>	<b>119</b>	<b>128</b>	<b>3%</b>	<b>3%</b>	<b>4%</b>
<b>Union-wide</b>	<b>114</b>	<b>119</b>	<b>128</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>

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.<sup>42</sup> 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

<sup>41</sup> Including Portugal which has not responded to the questionnaire.

<sup>42</sup> 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.<sup>43</sup> 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.<sup>44</sup>
- 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.<sup>45</sup>
- 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.<sup>46</sup>
- 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

<sup>43</sup> EA - Ejército del Aire, the Spanish Air Force.

<sup>44</sup> The analysis of SAR and MET costs are the subject of an upcoming PRB report.

<sup>45</sup> Idem.

<sup>46</sup> 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, PRISMIL-CURA, NMIR and CIMACT systems. Some Member States use their local solutions built on technical specifications developed by Eurocontrol (Figure 3).

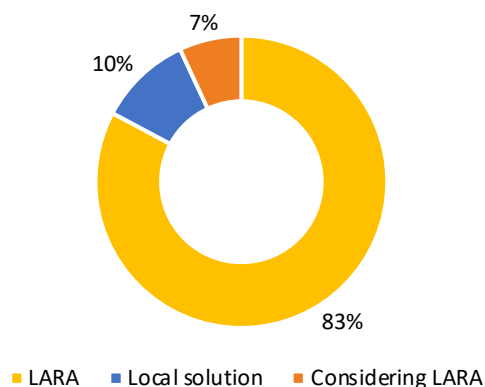


Figure 3 – ASM system in use (source: PRB elaboration on LSSIP data and LARA website, Eurocontrol).<sup>47</sup>

### 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

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

implemented by 31 December 2022.<sup>48</sup> 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

<sup>48</sup> 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.<sup>49</sup> Among these exemptions could be “military flights performed by aircraft of a Member State or any third country”.<sup>50</sup>

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”.<sup>51</sup>

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”<sup>52</sup>.

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.<sup>53</sup>

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.<sup>54</sup> 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”.<sup>55</sup> 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

<sup>49</sup> Article 31(3), 31(4) and 31(5) of the performance and charging Regulation.

<sup>50</sup> Article 31(4)(a) of the performance and charging Regulation for en route and 31(5) for terminal.

<sup>51</sup> Article 31(6) of the performance and charging Regulation.

<sup>52</sup> Articles 15 (3)(a) and (b) of the performance and charging Regulation.

<sup>53</sup> Including Eurocontrol costs.

<sup>54</sup> Articles 22 (6)(b) and 23 of the performance and charging Regulation.

<sup>55</sup> 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.<sup>56</sup>
- 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).

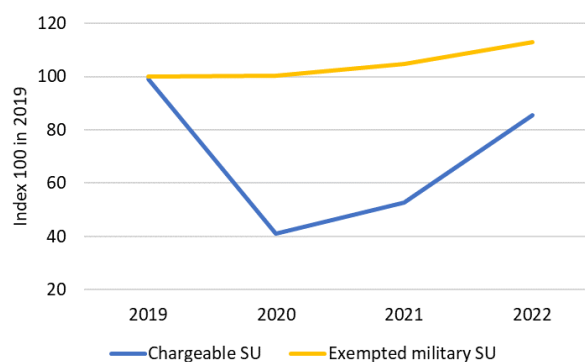


Figure 4 – Evolution of actual chargeable and exempted service units between 2019 and 2022 (source: PRB elaboration on CRCO Reports on the Operation of the Route Charges System in 2019, 2020, 2021 and 2022).

### 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.

<sup>56</sup> <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 Regulation<sup>57</sup> (para 116).

$$\begin{aligned} \text{DC of exempted military flights} &= \text{DC for IFR flights} \times \frac{\text{forecast SUs for exempted military flights}}{\text{forecast TSUs}} \\ \text{AC of exempted military flights} &= \text{AC for IFR flights} \times \frac{\text{actual SUs for exempted military flights}}{\text{actual TSUs}} \end{aligned}$$

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.

<sup>57</sup> 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.