



Performance Review Body
designated by
the European Commission



Methodology for the calculation of total “gate-to-gate” ANS costs



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1. Introduction

The aim of this note is to show how the ATM Cost-Effectiveness (ACE) data used for the purposes of the ATM Master Plan reconcile with the Performance Review Body (PRB) data used of the purposes of Reference Period 1 (RP1) cost-efficiency monitoring.

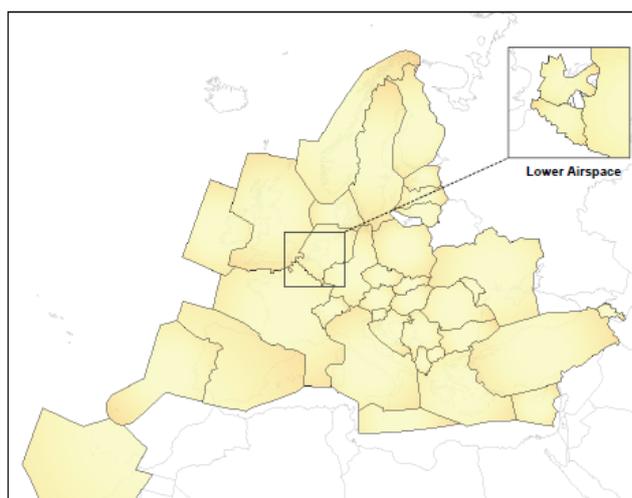
The main drivers for the differences observed in the two sources of information are: (1) the price base used to express the costs, (2) the geographical scope, (3) the number of airports taken into account in the aggregation of terminal ANS costs, and (4) the traffic. Table 1 below shows the main differences between the two information sources, for each of these factors.

	ATM Master Plan / ACE data	PRB RP1 cost-efficiency monitoring
Price base	Costs are expressed in real terms, using € ₂₀₁₂ .	Costs are expressed in real terms, using € ₂₀₀₉ .
Geographical scope	<u>37 States</u> : All EUROCONTROL Member States as of 1 st January 2012, excluding Bosnia & Herzegovina whose en-route costs are included as part of Serbia and Croatia.	<u>29 States</u> : All RP1 States, including EU 27 States, plus Norway and Switzerland.
Number of airports	All airports where the 37 ANSPs provide terminal ANS services, regardless of the size and level of traffic.	Only airports for which States have provided information and/or have established Terminal Charging Zones in RP1.
Traffic	Number of flights recorded by STATFOR in the ESRA 2008 area.	Number of flights recorded by STATFOR in the RP1 area.

Table 1: Main drivers for the differences between the unit costs calculated in ATM Master Plan and the PRB monitoring report

Figure 1 below illustrates the differences in geographical scope used for the aggregation of gate-to-gate ANS costs and traffic.

Geographical coverage of the ACE data analysis



RP1 SES States



Figure 1: Geographical scope used for the aggregation of gate-to-gate ANS costs and traffic

2. PRB RP1 cost-efficiency monitoring data

The table below shows the “Gate-to-gate” ANS costs that are used by the PRB for RP1 cost-efficiency monitoring.

En-route	SES States - Data as per EC Decision on Union-wide targets for RP1	2012P	2013P	2014P
	Real en-route costs (determined costs 2012-2014) - (in EUR2009)	6 296 297 788	6 234 893 556	6 179 610 754
	Total en-route Service Units	108 776 000	111 605 000	114 610 000
	Real en-route unit costs per Service Units - (in EUR2009)	57.88	55.87	53.92
	SES States - Data from RP1 national performance plans	2012P	2013P	2014P
	Real en-route costs (determined costs 2012-2014) - (in EUR2009)	6 258 122 341	6 318 609 442	6 304 761 101
	Total en-route Service Units	108 359 738	111 461 030	114 964 695
	Real en-route unit costs per Service Units - (in EUR2009)	57.75	56.69	54.84
	SES States - Actual data from June 2015 Reporting Tables	2012A	2013A	2014A
	Real en-route costs - (in EUR2009)	6 047 812 097	5 947 919 729	5 947 263 158
	Total en-route Service Units	103 501 763	105 171 670	109 836 771
	Real en-route unit costs per Service Units - (in EUR2009)	58.43	56.55	54.15

Terminal	SES States - Data from RP1 national performance plans	2012P	2013P	2014P
	Real terminal ANS costs - (in EUR2009)	1 476 675 685	1 469 589 294	1 475 519 179
	SES - Actual data from June 2015 Reporting Tables	2012A	2013A	2014A
	Real terminal ANS costs - (in EUR2009)	1 395 162 571	1 343 328 825	1 348 795 857

Gate-to-gate	SES States - Data from RP1 national performance plans	2012P	2013P	2014P
	Real gate-to-gate ANS costs - (in EUR2009)	7 734 798 026	7 788 198 736	7 780 280 280
	Share of en-route costs in gate-to-gate ANS costs	80.9%	81.1%	81.0%
	SES States - Actual data from June 2015 Reporting Tables	2012A	2013A	2014A
	Real gate-to-gate ANS costs - (in EUR2009)	7 442 974 668	7 291 248 553	7 296 059 016
	Share of en-route costs in gate-to-gate ANS costs	81.3%	81.6%	81.5%
	SES States - Actual data extracted from STATFOR dashboard	2012A	2013A	2014A
	Number of IFR flights	9 078 353	8 937 663	9 103 920
	Real gate-to-gate unit costs per IFR flight - (in EUR2009)	820	816	801

Table 2: PRB RP1 cost-efficiency monitoring data

The “gate-to-gate” ANS costs are the sum of en-route costs and terminal ANS (TANS) costs reported by all the SES-States subject to the Performance Scheme in RP1 (EU27 + Norway and Switzerland). They comprise all the costs of the ATSPs, the NSAs/regulatory authorities, the MET service providers and the costs stemming from international agreements such as EUROCONTROL costs (for en-route only).

En-route costs from RP1 National Performance Plans (NPP) are those that were used to calculate the regulated cost-efficiency indicator in RP1, the Determined Unit Rate (DUR), and the actual en-route costs are those reported by the SES States in the June 2015 Reporting Tables.

TANS costs in RP1 were not subject to target setting but the SES States were however required to publish the TANS costs planned for each year of RP1 in their NPPs (although only for airports > 70K IFR movements, as specified in the Performance Regulation). Actual costs for these Terminal Charging Zones are also subject to annual monitoring and were reported by the member States in their June 2015 TANS Reporting Tables.

At SES level, en-route costs represent around 81% of the total “gate-to-gate” ANS costs and the share has been relatively stable over RP1.

Since the cost-efficiency targets for RP1 were expressed in real terms (in €₂₀₀₉), all figures in the above table are also expressed in €₂₀₀₉. The inflation rates that were used to convert the costs in €₂₀₀₉ are those reported by each State. Planned inflation rates are used to convert planned costs and actual

inflation rates are used to convert actual costs. Detailed information on the inflation rates is available in the individual PRB 2014 Monitoring Reports at State level (Volume 2).

In order to calculate a “gate-to-gate” ANS cost per unit of output, and to monitor the trend over RP1, the number of IFR flights recorded in the RP1 SES region has been used, since en-route SUs and terminal SUs are not additive. The number of IFR flights in the RP1 SES region (see Table 2) has been calculated by STATFOR.

3. ATM Master Plan data

The ATM Master Plan uses a reference value of 960€₂₀₁₂ for the average cost per flight for the year 2012, which is higher than the 820€₂₀₀₉ calculated by the PRB for the same year. The figure used in ATM Master Plan was derived from the ACE 2012 Benchmarking Report. The details of the unit cost calculation are shown in the table below.

	Year 2012
Gate-to-gate ANS costs (in M€ ₂₀₁₂)	9 153
Number of flights (in M)	9.5
Gate-to-gate ANS costs per flight (in € ₂₀₁₂)	960

Table 3: ATM Master Plan data

It should be noted that the gate-to-gate ANS costs from ACE 2012 (9 153 M€₂₀₁₂) comprise 37 ANSPs (excluding elements related to services provided to military operational air traffic (OAT), oceanic ANS, and landside airport management operations) as well as National Supervisory Authorities (NSAs) and other governmental authorities, national MET providers and the EUROCONTROL Agency. In this respect, the entities covered in the ACE analysis are similar to those covered in the PRB analysis.

Taking into account the elements of differentiation presented in the introduction of this note, it is calculated that:

- The costs considered in the ATM Master Plan are, all else being equal, some 596 M€₂₀₁₂ higher than the costs used by the PRB for RP1 cost-efficiency monitoring because of the difference in price base (i.e. €₂₀₁₂ vs. €₂₀₀₉)
- The ATM Master Plan also covers 1 114 M€₂₀₁₂ of additional Gate-to-Gate ANS costs due to differences in geographical scope (both due to the larger number of States and the inclusion of all airports, regardless of the level of movements controlled per year or whether or not these are included in a Terminal Charging Zone).
- IFR flight volumes are +5.2% (or 470.050 flights) higher in the ATM Master Plan due to differences in geographical scope.

4. Conclusion

Table 4 shows the differences in real gate-to-gate costs, number of IFR flights and resulting unit costs, quoted directly from the source documents.

	ATM Master Plan data	PRB RP1 monitoring data
Real gate-to-gate ANS costs	9 153 M€ ₂₀₁₂	7 443 € ₂₀₀₉
Number of IFR flights	9.5 M	9.1 M
Real gate-to-gate unit cost per IFR flight	960 € ₂₀₁₂	820 € ₂₀₀₉

Table 4: Comparison of the different data sources before reconciliation

Although at face value there is a large difference between the 2012 unit cost from the ATM Master Plan (i.e. 960€) and the unit cost from the PRB monitoring report (i.e. 820€), the two figures are reconcilable.

Indeed, Table 5 below shows that:

- limiting the geographical scope of the ATM Master Plan to the 29 RP1 States, the gate-to-gate ANS cost per IFR flight falls from 960 €₂₀₁₂ to 911 €₂₀₁₂; and
- expressing the PRB RP1 real gate-to-gate ANS costs in €₂₀₁₂ increases the cost per IFR flight from 820€₂₀₀₉ to 885 €₂₀₁₂.

	ATM Master Plan data (reducing scope to RP1 States)	PRB RP1 monitoring data (expressed in €2012)
Real gate-to-gate costs	8 267 M€ ₂₀₁₂	8 039 M€ ₂₀₁₂
Number of IFR flights	9.1 M	9.1 M
Real gate-to-gate unit cost per IFR flight	911 € ₂₀₁₂	885 € ₂₀₁₂

Table 5: Correction of the geographical scope and the monetary factors

The remaining difference observed in Table 5 (i.e. 911€₂₀₁₂ vs. 885 €₂₀₁₂) is due to the fact that the PRB RP1 monitoring data comprises only airports for which States have provided information and/or have established Terminal Charging Zones in RP1. The factual difference between 911€₂₀₁₂ vs. 885 €₂₀₁₂ is less than 3%.

Finally, it is important to keep in mind that since most of the flights controlled by the RP1 States are also controlled by the non-RP1 States, the cost per IFR flight calculated for the ESRA 2008 area is larger than the cost per IFR flight calculated for the RP1 SES area (all else being equal). This might not be fully intuitive since most of the non-RP1 States tend to have lower unit rates than the RP1 States. This is due to the fact that the costs are additive but not the number of flights. This would have been different if the output metric would have been kilometres controlled, flight-hours controlled, or service units rather than IFR flights.