

POLICY BRIEF

EUROPEAN TRANSPORT REGULATION OBSERVER

Financing Air Traffic Management: Is there a need for a new approach?

Highlights

Air Traffic Management (ATM) is a set of services which every State must provide for the safe and efficient operation of air traffic. Today, it is almost entirely financed by user fees according to the “user pays” principle. Until today, the “user” has always been assumed to be the airspace user, normally an airline. This system comes under pressure today: current [Single European Sky \(SES\) regulation](#) is built on the assumption that air traffic in Europe continuously increases. Thus, the financing of ATM would be secured by increasing revenue due to higher traffic volumes.

Technological progress and efficiency gains should lead to reduced cost and lower environmental footprint of aviation while increasing safety and capacity. Two crises – the financial and banking crisis of 2008 and more recently the COVID-19 pandemic – show that the assumptions of this regulatory framework are wrong. Additionally, there is the question of who the actual “users” are. Does ATM only serve paying airlines, or are there some services which are provided in the public interest?

Turning the wheel back and promoting a full cost recovery financing model would be contrary to the logic of regulating monopolistic infrastructure providers. But it is a fact that recent events raise the question as to whether the current financing model, which is ultimately market based, is still adequate.

With the pressure to increase the efficiency of the SES for environmental reasons, one may wonder whether some baseline public financing for the critical infrastructure portion of the ATM – which could be different from country to country – could not mean a step towards a better charging scheme and therefore a step towards the leading ideas behind the SES and the [European Green Deal](#).

In light of the above, the [19th Florence Air Forum](#) brought together relevant stakeholders to discuss opportunities and challenges for ATM financing.

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ATM, a public service?

A comment by Matthias Finger and Juan Montero, Florence School of Regulation – Transport Area

Against the backdrop of the effects of COVID-19, the 19th Florence Air Forum explored new ways to finance air traffic management (ATM). To recall, ATM is a state responsibility subject to ICAO rules and it has to be financed by the airspace users. With the huge drop in traffic during COVID it became clear that ATM was ‘too important to fail’, thus leading to state support, albeit in very heterogeneous ways. ATM financing is predicated on (almost) unlimited traffic growth, an assumption that has become untenable in the light of the climate crisis. Moreover, the Ukraine war further decreases the availability of civilian airspace while increasing its operating costs and the ensuing need to finance them. Most of the participants, therefore, agreed that change was needed. And whatever changes are made should further and even accelerate (rather than distract us from) the overall vision of a seamless Single European Sky (SES) as set out in 1999 by then Commissioner Loyola de Palacio. Before COVID, questions had been raised about the long-term viability and desirability of the underlying charging scheme (weight x distance) that determines who pays how much for ATM services delivered by air navigation services providers (ANSPs). This “vintage formula,” according to one of the participants, does not really incentivise efficiency and neither does it favour restructuring of the European airspace, something that is a prerequisite for the qualitative change needed to increase capacity.

A clear distinction has to be made between crises and non-crisis situations. There is indeed agreement that in crisis situations alternatives to the current financing mechanism are needed. This is despite the fact that in the case of COVID exceptional measures were adopted at the EU level to enable ANSPs to fully recover their revenue losses over 5-7 years, a system that guarantees the financial sustainability of ANSPs without state financing. At least there is a need to harmonise the different ways in which the

member states ‘support’ their respective ANSPs during times of crisis. Support schemes could be predefined according to different scenarios, for example predefined the thresholds that can trigger state support, maybe in terms of traffic level, loans or subsidies, etc. An interesting suggestion regarding the definition of a ‘minimum service’ level that ANSPs would have to provide in times of crisis, be it in terms of types of flights, is that most central airports should be served and connected – analogously to the Trans-European Network of airports – or simply have availability of ATCOs. Only such minimum services would then be eligible for state support in such times of crisis.

As for state financing of ATM in normal times, everyone agreed that there is a need for a harmonised approach concerning the services that states are already financing in accordance with current rules (i.e. services to flights exempted from route charges, services to military users). The study launched by the Performance Review Body (PRB) on ‘The services and infrastructure used by both civil and military airspace users and the potential impact on the costs charged to airspace users’ is most welcome in this respect as it will also shed (some) light on how ANSPs’ handling of military flights is paid for in the different member states. A parallel study has been launched to cover search and rescue flights. Regarding an expansion of the scope of state financing through a harmonised approach, the views of the different stakeholders diverged more, because as any change in the way infrastructure is financed creates winners and losers. The most obvious losers are of course member state taxpayers, who will inevitably have to pay more. This is even more obvious for those small states whose ANSP is mostly serving lucrative overflights.

A big intellectual challenge will of course be to define the ‘public services’ provided by the ANSPs. Part of this challenge pertains to the question of whether ATM is a public service, a toll or a common good. Depending on what it is, ATM regulation will look very different. Less controversial and probably easier to implement is certainly the idea that some of the services

that ANSPs provide are services to the state, for which the state as a user logically should pay independently of whether it owns the ANSP or not. The most obvious ‘public services’ are military and search and rescue flights (see the need for transparency and harmonisation in the previous paragraph). However, there may be other services that the state may want to order from the ANSP and be ready to pay for, or more abstractly capacity reserves just like for electricity. The undeniable advantage of this approach to ‘public services’ is that it will not preclude any restructuring of the European airspace and neither will it preclude changes in ownership and control of ANSPs. The state simply has to define the ‘public services’ it wants from the ANSP serving its national territory and pay for their provision following transparent charging criteria.

More controversial is the idea that a portion of what the ANSP does – its core activities so to speak – is the equivalent of a basic infrastructure service in the general economic interest, and as such needs to be financed with taxpayers’ money rather than with fees paid by users, a proposal tabled by the German aviation industry. The danger in this way of defining the ‘public service’ lies in the fact that it might further cement the fragmentation of airspace in the EU and therefore probably make restructuring European airspace even more difficult, especially if the current charging scheme remains untouched. However, in other sectors public service obligations have been harmonised at the EU level and not at the member state level (telecoms, postal services). Needless to say, such an infrastructure-related approach to ATM will necessarily have to be accompanied by a much stronger economic regulation of ANSPs than is the case today.

Main Takeaways from the Discussion

By Lola Montero Santos, European University Institute, Law Department

The [19th Florence Air Forum](#) provided a timely platform for reflection on the financing of air traffic management (ATM), which currently operates on the user-pays principle. The volatility of the global economy – and in particular the 2008 financial and banking crisis and the COVID-19 pandemic – has challenged the assumption of continually growing air traffic in Europe, which underlies this framework. The need to increase the efficiency of the Single European Sky (SES) along with the need to adhere to the standards of the [European Green Deal](#) further underscores this perception.

The 19th Florence Air Forum focused on the following fundamental questions, to each of which a session was dedicated.

1. What have we learned from COVID-19 about ATM financing? Is there a threshold below which Air Navigation Service Providers (ANSPs) should be financially supported?
2. How are ATM services for actors delivering services in the general interest financed? How are they financed in other network industries?
3. Could some part of ATM be financed publicly and if so under what conditions?
4. Is there a need for a change of approach?

Introduction

Discussion on how to finance ATM is not new. The topic seems to resurface every time the sector goes through a crisis. The COVID-19 pandemic was only the latest crisis to dramatically impact this sector. The drop in traffic it brought caused a huge revenue gap for all involved in the aviation sector. The war in Ukraine triggered another crisis, but this time of a heterogeneous nature as it deeply impacted some European players more than others.

The recent challenges experienced by the sector have also raised the question of who the system's real users are, especially given the strong unwillingness of states to bear the cost of resolving the issue during times of crisis.

The forum reflected on the lessons learned in these crises from a pure ATM financing perspective and worked on designing a plan for the future. To this end, lessons were drawn from other sectors, in particular strategies that had been adopted in other network industries, and in the financial and banking sectors after the 2008 crisis. A key thought in the room from the beginning of the forum was that there is an absence of a common view on which exceptional situations in ATM financing (if any) warrant a departure from the user-pays principle. The point of departure for the forum was set by the Commission, which identified the following central discussion points.

- Which functions of ANSPs should be, by definition, state-financed?
- Which key metrics could define the occurrence of an exceptional situation that would trigger a different type of financing?
- What level of minimum service is required if a significant drop in air traffic occurs? And should this minimum service be publicly financed?
- Should the requirement be maintained for airports and ANSPs to operate at full capacity regardless of air traffic considerations?
- Should the ATM financing scheme be modified by splitting the financing into state funds for public services (possibly remaining constant) and commercial funding of the remaining costs according to commercial demands (fluctuating)?

It was suggested that the discussion should focus on different areas by first finding answers to each of the questions and then by attempting to integrate them in a full picture. This summary follows this suggestion by grouping the discussion and ideas exchanged into topics.

ATM Financing: COVID-19 Lessons

The economic impact of COVID-19 created a financial liquidity challenge for air navigation service providers and raised questions regarding the model for ATM financing in times of exceptionally low traffic. Before the crisis, the user-pays principle was applied in such a way that the aviation system was almost completely self-funded. The system had its flaws, such as capacity issues, but overall it worked. Participants, however, not only identified the economic difficulties that COVID-19 caused but also the imbalances in covering ATM costs that it exposed.

The economic impact

Airlines, airports and ANSPs saw (almost) no traffic in the midst of the COVID-19 crisis but especially ANSPs needed to sustain high fixed costs.

Especially for airlines, many inequalities arose because the [State Aid Temporary Framework](#) developed by the Commission was implemented differently in different countries, something that had actually been discussed during the [18th Florence Air Forum](#). While some operators received capital to cover their losses, much of this capital was not free of charge.

State loans

In some states, capital injections took the form of interest-bearing or commercial loans, which airlines had to pay back to the government. Some industry representatives considered this fair but others did not.

Raising Equity

To counter the loss of revenue, some airlines needed to raise funds from shareholders. This led to large discounts in their share prices.

Selling aircraft and other assets

Many airlines sold some of their aircraft and in some situations then had to lease them back. This brought in revenue but at a higher cost. In jurisdictions where it was allowed, airlines laid

off personnel (mostly temporarily). Additionally, most airlines put investments on hold and were forced to stop projects that had been ongoing before the COVID-19 crisis.

Imbalances in bearing the cost: a paradox

Some of the funds that airlines (and airports) needed to borrow to cover their lost revenue had to be used to pay for government-owned assets such as certain airports and ANSPs, which used them to finance their services. This was at a time during which the airlines could not use these services because of the COVID-19 restrictions put in place by governments. This was paradoxical, as the airlines were in practice paying for the provision of services that were used to a large part by state aircraft and military users (public services).

At the same time, many airports and some ANSPs (when it came to aerodrome control services) asked governments for permission to shut down to save costs. However, they were mostly not allowed to do so.

While airlines were not allowed to fly, governments forced ANSPs and airports to remain open and fully operational, and airlines were still obliged to cover their costs.

On this point, however, some participants argued that reducing ANSP staff and investment would have put operational performance at risk when traffic levels recovered. This would have resulted in capacity constraints and delays in services after the COVID-19 crisis.

As a last imbalance, several airlines complained about the lack of parity between their rights and obligations. While airlines were obliged to reimburse passengers immediately even for non-refundable tickets, they were obliged to pay for services that they would not receive.

Ukraine

Some stakeholders had worries about later crises even before Covid-connected losses were covered, such as the consequences of the war in Ukraine. The sanctions decided by the EU involved a ban on flights to Russia. Vice versa, Russia also banned flights to the EU, as well as overflying, which in particular affected its neighbouring countries. This caused an almost complete loss of overflights to and from the Far East for some operators, which was accompanied by a radical drop in income.

Structural reform or small adaptation?

Many representatives agreed that now is the moment to discuss ATM financing. This issue tends to resurface during crises, while it is often ignored in normal times. However, it is not possible to change the financing structure during a crisis, particularly given the cost structure of many state-owned ANSPs. These entities are tied by many obligations, which makes it very difficult to achieve expedient cost reductions.

A minority of participants argued that the ATM financing framework should not include pre-financing of a future crisis. The proponents of this view considered that airlines should continue to pay for the services they use, and ad hoc measures can be devised if another crisis occurs.

This option is viewed as the most attractive one for the member states, as it gives them the most freedom in tackling crises and the least responsibility during times of normal operations.

Ultimately, changes in the ATM field depend on the willingness of states. If states prefer to address crises with ad-hoc solutions, making changes in the industry will be very challenging.

Regardless of the above difficulties, it became clear from the discussion that two distinct alternative paths can be followed.

Maintain current ATM financing but set criteria that would trigger a change in financing when an exceptional situation occurs.

Carry out a structural reform of ATM financing

in which different ATM dimensions permanently receive different types of financing.

These two paths are not necessarily contradictory. In fact, several stakeholders were in favour of a combination of the two. They considered that as a first step thresholds triggering state financing should be designated, while in the long run an actionable vision of a structural transformation of ATM financing needed to be developed. However, not all the participants agreed.

1. Setting thresholds to trigger state financing

Many stakeholders proposed alternative ways of financing ATM so as to better face future crises that result in substantially lower air traffic levels. However, two main camps could be identified. One focused on the fact that ATM is currently already partially financed with public money for certain services. The other argued that the status quo does not reflect an appropriate understanding of the user-pays principle. Some members of both camps suggested creating reserves for times of crisis.

No need for a paradigm change, but define triggers for state intervention

Some of the proponents of this approach considered that ATM financing could operate as business-as-usual in situations of normal traffic. However, if traffic were to fall below a given level public funding would be needed to cover costs. Therefore, the discussion focused on setting appropriate triggers for state intervention.

Services currently financed with public funds

The types of services and the degree that they are financed by state funds vary across nations. Some of these services are provided to flights exempted from air navigation charges which can cover military flights, medical transportation, humanitarian aid, emergency services, etc. In addition, there are certain state prerogatives that are not charged to civil users, including national security arrangements for specific events, (such as the Olympics or G7 meetings). It was

suggested by some participants that such state financing should also apply regarding the maintenance of given legacy systems and historical infrastructure. Furthermore, the military provides and finances some ATM services which are also available for civil users, which may include communication and navigation and surveillance (CNS) infrastructure, which is used by both military and civil aviation.

Exempted flights

Several participants mentioned that states already contribute to the costs of exempted flights and on a voluntary basis provide public funding for certain air navigation services (in particular terminal air navigation services), as is stipulated in the [Commission Implementing Regulation \(EU\) No. 2019/317](#). However, others countered that while some states are quite scrupulous in identifying and reimbursing ANSPs for the costs incurred for services provided to exempted flights, others are not so transparent, which leads to doubts about possible imbalances in the allocation of costs.

Reframing the implementation of the user-pays principle

Many industry representatives agreed that reframing the implementation of the user-pays principle is a realistic approach to reshaping the system. Participants agreed that this principle makes economic sense, but there were disagreements on its implementation. Several stakeholders argued that the logic of the current system is that each entity should pay for the services that it uses. However, issues arise when certain users are asked to pay for services that they do not use.

During the COVID-19 crisis, the state mandate to keep airports accessible meant that 20% to 30% of the cost of an ANSP was linked to the provision of this service, which was mostly kept available in the public interest at the request of states. Some participants considered that during such crises the state becomes the real user, and as such should cover these costs.

States have an obligation to ensure the provision of air navigation services in their airspace and therefore have a prerogative to decide on the available level of services regardless of the situation. However, the current rules in place vary in their implementation from state to state. This prerogative cannot be modified at the EU level without a consensus of the member states. It was considered unlikely that this right will be relinquished.

Capacity contracts?

Some stakeholders suggested that a more differentiated application of the user-pays principle can be achieved with capacity contracts between states and ANSPs. This would enable ANSPs to promptly be financially compensated for the services they are expected to deliver to the state. This would be a more direct application of the user-pays principle as the state would be paying for what it uses.

Adapting SES Reg. No. 550/2004

Some participants suggested that SES Reg. No. 550/2004, which regulates the provision of air navigation services in the Single European Sky, would need to be amended in order for the user-pays principle to be modified in a permanent structural manner. There is already flexibility in current rules to account for situations in which there is a drop in air traffic. Ad hoc provisions adapting the implementing rules in exceptional times of crises may be put in place within the current framework, as was demonstrated during the COVID-19 pandemic.

It was also suggested, along the same lines, that improvements in operational performance can be achieved within the existing framework. Incentives can be set for quick capacity adjustments and environmental aims.

Equity or reserves

The stakeholders considered that currently, almost no state has planned a budget to cover the cost of ATM during a crisis. Even if a triggering factor were identified, the funds do not exist. Therefore, they considered that provision of these funds needs to be planned over a longer period before a crisis. They acknowledged that there may not be sufficient time to properly discuss this during Reference Period 4 (or RP4) but proposed that this matter should be tackled during RP5.

Some participants supported the option of setting up reserve funds which could be used to mitigate the financial impact of crises on ANS charges. It was proposed that ANSPs should store equity or reserves in periods in which they make a profit. This could then be used in times of crisis.

This method would be particularly useful in states where ANSPs are structured as not-for-profit or government agencies. However, in other countries such as the UK and Italy ANSPs are partly privatised. Many agreed that this divergence in structure makes it even more difficult to find one-size-fits-all solutions.

Moreover, some participants argued that a cost recovery framework including a fixed state-funded component would reduce the motivation of ANSPs to deliver better services to customers. The funds could also be employed for innovation activities.

Public reserves at the EU level?

Some participants suggested that potential reserves should not be kept by the state but by the European Union. They considered that managing the funds with the institutional backing of the EU could be beneficial.

However, some stakeholders replied that proposals to build such an EU fund would probably receive a significant backlash. Decision-makers would be likely to have difficulty in defining the criteria for setting up this fund. The EU budget is already paid for by the member states and it would be very unlikely to be used

for this purpose. The budget from 2028 onwards is likely to focus on other matters, especially after the war in Ukraine.

Voices of caution

Most stakeholders agreed to adopt measures to cope with future situations of significant drops in traffic levels. However, several participants were wary of dedicating too much time, energy and resources to this aim, which could have a limited payoff. According to these participants, given the unusual nature of the COVID-19 pandemic, perhaps it should be seen as a one-off event, which should not be a basis for redesigning the entire system.

2. Structural reforms

Several stakeholders suggested different approaches to deeply reframing ATM financing. Overall, those who supported this path were conscious of the importance of developing a clear shared vision that can help the industry grow. However, several participants reminded the forum that none of the ideas suggested could be implemented without government support and involvement, also bearing in mind the necessity to amend underlying EU basic legal provisions in the case that the user-pays principle is adapted.

Wariness of structural reforms

Several participants invited the forum to reflect on the lessons learned from the SES over the last 20 years. These showed that despite numerous good intentions on the part of the Commission few modifications have occurred, particularly due to a lack of agreement among the member states.

These participants argued that any type of outlier event can expose all the defects in a given regulatory structure. Therefore, for various reasons, most stakeholders favoured the option of first tackling smaller but meaningful regulatory changes rather than an overall restructuring of ATM financing.

Others opposed this view and countered that “now is the moment to rock the system and change things.” These stakeholders considered that the European ATM financing scheme is no longer fit for purpose as it does not take into account the complexity and heterogeneity of current air traffic.

There was agreement that it will be difficult to modify the status quo, which is very convenient for states. However, they viewed this crisis as a motivating factor to increase the willingness of states to honestly discuss ATM financing. Similarly, many participants suggested setting a reasonable transition time for structural reforms such as ten to fifteen years. They considered that it was necessary to work systematically and consistently towards a certain vision without abrupt changes.

A Business Model Shift

A small number of stakeholders considered that states should finance everything connected to ATM except for the costs incurred by the operation of commercial airline flights. However, most of the proponents of permanent reforms felt that this would not be the appropriate path. They considered that it would not lead to an improvement in ATM efficiency and that such a proposal would not provide states with any intrinsic motivation to change the system.

The majority of those in favour of a radical renewal of ATM financing principles considered that more business-oriented ANSPs were the right approach. Indeed, many ANSPs see their future as more business-like, with those that do not deliver the desired results going out of business in the long run and those achieving their aims receiving economic rewards instead of administrative bonuses. This is reflected in the [CANSO Europe 2035 Vision, a position paper endorsed by 35 European ANSPs](#). To this end, more emphasis needs to be put on industry consolidation, leading to traffic-driven organisations rather than national interest-driven ANSPs.

The need to account for the provision of minimum services exists in many sectors. Separation

between the provision of minimum services and the provision of commercial services can foster innovation.

There are places where ANSPs are already both public and private organisations. Therefore, several real-life examples could be studied and analysed as building blocks for an EU-level shift. More competition can take place in the area beyond guaranteed minimum service. This would lead to improvements in service quality and efficiency and potentially lower costs for airlines and other users.

The Commission tried to foster this in its SES 2+ proposal (put forward in [2013 and updated in 2020](#)) by promoting a single European airspace in which certain air navigation services could be subject to competition.

This involved a functional separation of the monopolistic and competitive activities of ANSPs, and an independent economic regulator to oversee charging by ANSPs and their funding.

These proposed measures have been significantly watered down as they faced steep opposition from national interests in preserving sovereignty and industry stakeholders that did not want their operations to be disrupted.

A two-layer system: separating public and commercial activities

Various industry representatives believe in the benefits of developing a two-layer system, with one layer comprising the minimum (essential) services required by the state and another above it with a business environment focusing on serving the needs of commercial air traffic. However, within the ANSP community there is still much disagreement on the minimum level of service. While some perceive this concept as a vehicle for increasing their public funding, others view it as an enabler creating a business environment. This is discussed later in this report.

Nevertheless, the proponents of a two-layer system consider that it could also enhance the performance of ATM services. This would however require strengthening economic reg-

ulation, including establishing an economic regulator at the EU level. However, there is much opposition to this among many member states, which do not want to modify the current framework for economic regulation and prefer the user-pays principle.

The main constraints on ANSPs in Europe

Several participants pointed out that the performance of the ATM sector in the EU is affected by the following characteristics.

1. A fragmented airspace, broken up by national borders.
2. Heterogeneous ANSP sizes, with the smaller ANSPs sometimes afraid of new initiatives.
3. Different institutional and business setups. While some ANSPs are companies traded on the stock exchange, others are part of the civil service.
4. A conservative business culture, which often limits interest in new concepts.
5. Political fragmentation at the EU, national and regional levels, with different lobbying groups pursuing their own interests rather than the overall efficiency of the system.

Improving Performance

The stakeholders agreed that the aim of ANSPs is to avoid delays and to accommodate traffic growth. There was also a large consensus that certain ANSPs did not achieve the desired performance outcomes under the current ATM business, regulatory and charging model when there was excess demand (for example in 2018-2019), an extreme excess of supply (Covid, 2020-2021) and in the recent phase of strong recovery of traffic demand following the COVID-19 pandemic (from 2022 onwards). It is difficult for ANSPs to rapidly hire new personnel with the required skills if the traffic is more than expected, which leads to a risk of lack of capacity. Some operators questioned whether the performance and charging scheme under EU regulations is currently fit for purpose because it does not allow ANSPs to quickly recover losses.

In the current framework, the charges for ANSP services are intended to be fair, transparent, and based on the determined cost of providing air navigation services, with risk-sharing mechanisms addressing unplanned changes in traffic and costs during the reference period. This means that during a crisis in which ANSPs sustain significant losses they may face liquidity challenges until they are able to increase their charges in accordance with applicable regulatory adjustments.

This results in two main difficulties. One is that ANSPs lack the financial resources needed to be able to make investments and innovations to meet sustainability requirements. The other is linked to the cyclical nature of crises. ANSPs may encounter a new crisis before they approach positive balance sheets, and potentially even before reaching this milestone.

Some commentators consider that the consequences of the war in Ukraine highlight this reality for some stakeholders and show the need to reform the framework. Those pursuing the 'liberalisation' of ANSPs within a regulated business-orientated environment argue that such liberalisation would resolve these issues.

The group advocating a business model shift argued that the previously mentioned economic imbalances and the lack of timely adaptation to fluctuations in demand show that the current framework does not produce the desired levels of performance and cost-effectiveness. One participant suggested that ANSPs should be regarded as service companies and so they should be financially compensated for rendering the timely services required, which would result in the best value for money, or at least good value for good money.

Moreover, some argued that a more business-oriented structure would foster competition among ANSPs and would improve the services they provide. In particular, several airline users would like to pay ANSPs for resilience and predictability of both delivery of services and charges. If different ANSPs can propose different financial arrangements, with higher charges for more predictable airspace and lower charges for

less predictability, industry dynamism could be enhanced.

A minimum level of service

Stakeholders agreed on the difficulty of defining a minimum level of service. The participants raised various points without, however, reaching a consensus.

- The minimum level of service should be set according to the fixed costs of ANSPs, which should then be financed by the state.
- The minimum level of service should not be marginal cost-based, which would seem more like a subsidy of the aviation sector and could be challenged by other transport mode businesses.
- Developing technologies could increase the scope of public services covered by the ATM sector, such as military drones.
- Connectivity requirements should be accounted for as minimum levels of service. In certain member states, this is the case of routes covering remote areas, where air transport is crucial for connectivity and accessibility.
- Maintaining all the airspace and airports open during a time of no commercial air traffic should be regarded as a core service provided on behalf of the state and financed by public funds.

Effects on fair-competition

Some concerns were raised regarding the connection between a minimum level of service and state aid. If states individually decide the level of subsidy they want to provide for specific core ATM services, competition could be highly distorted. Some air navigation service providers could offer comparatively lower route charges not because they perform better but simply due to state funding.

Environmental concerns

Subsidising the aviation industry may be difficult to explain politically, especially in certain states. However, there may be a mechanism that links state money for the sector to sustainability-connected factors.

The industry is aware of the need to become climate neutral at a certain point, which will require a huge amount of investment.

Some participants were concerned about larger planes being equated with more environmental sustainability. Although small aeroplanes probably pollute more, with more CO₂ being released per individual passenger, smaller aircraft are sometimes needed for certain regions or for certain airports with shorter runways. These participants did not support modifying the formulas currently applied for calculating ANS charges, which are based on the weight of the aircraft. Similar concerns were raised about increasing charges for the most sought-after routes, which could disincentivise more fuel-efficient routes.

ATM as a public service

Several factors were highlighted as characterising ATM as a public service that should be (at least partly) financed by the state:

- ATM requires expensive infrastructure which needs to be maintained for the public good.
- [Arts. 28 and 15 of the Chicago Convention](#) oblige the signatories to ensure and maintain ATM services and non-discriminatory treatment in international air transport.
- The safety, security, economic and environmental [standards of ICAO Member States](#).

There are two factors counter to the view that ATM is a public good:

- ATM serves a limited number of users. Generally, wealthier members of the population fly more often.
- Capacity restrictions can condition the amount of use a single user can enjoy.

Independently of the above, some stakeholders argued that government financing of ATM services is a policy choice regardless of the nature of these services as a public or non-public good. These people argued that there are no obligations or legitimate reasons to assign the financing of ATM/ANS to states.

Similarly, others argued that even if ATM was a public service it would still be best to finance it with user charges. They considered this to be better for the allocation of costs (especially those connected with civil aviation) and cost recovery.

Core Services of General Interest

The concept of core services of general interest (CSGI) was proposed by some stakeholders to theoretically describe how the monetary value of basic services could be calculated. These values would also depend on national circumstances. CSGI would comprise certain ATM public aims, such as

- implementation of measures to increase environmental protection;
- noise abatement (protecting the population from noise);
- reductions of fuel burnt and CO₂ emissions.

Some argued that this concept should include the cost of simplified short-term operation of air navigation services reduced to core services during times of crisis, including

- provision of minimum staffing levels (including for state, emergency, hospital and humanitarian flights) and essential operational facilities;
- maintaining the functional ability of operational and technical systems and services;
- ensuring maintenance of infrastructure, including minimum lifecycle management (such as IT security updates and patches).

The proponents of CSGI considered that it is aligned with the user-pays principle, as the state is the main user of core services.

Lessons from other industries

Participants reflected on the regulatory frameworks of different modes of transport and industries, in particular those which also provide services of general interest.

Many considered that ATM financing is an outlier, as it is the only 100% industry-pays sector.

Some suggested that national political interests prevent public financing of ATM. While drinking water and public transport are generally delivered to the residents of a given state, the benefits of ATM services are not so geographically constrained.

These participants argued that the distinction between infrastructure and service is well-known and applied in other (network) industries. They viewed this as a sustainable way forward that should be pursued for ATM.

Infrastructure-based industries

The point of departure regarding state financing is the current different degrees of public funding in different industries. In some industries such as railways about 70% of costs are funded by the state. For air transport, the situation is very different. This highlights the fact that there are many infrastructure-based industries characterised by very high fixed costs with very different frameworks.

B2B vs. B2C

The EU process liberalising network industries lasted more than 30 years. Funding, investment recovery schemes and risk distribution are very different across industries. Similarly, some industries, like telecoms, are vertically integrated with one operator owning the infrastructure but having to allow different operators to use it under fair non-discriminatory conditions. There is a distinction between the infrastructure layer (a business-to-business relationship, B2B) and the service provision layer (a business-to-consumer relationship, B2C) which enables end users to receive the service. In these industries

competition takes place at the B2C level while the involvement of public authorities occurs in the B2B layer.

The provision of universal services

In connection with minimum services and lessons from other industries, some participants highlighted the possibility of these services being financed by

- universal service funds – a partial or complete application of the industry-pays principle along with market share contributions;
- the public budget – considered by some to be a fairer application of the user-pays principle.

This occurs in the provision of universal services in telecoms and postal services. However, financing services of general economic interest, that is services that would not be (properly or affordably) supplied by the market without public intervention, requires certain criteria to be met. These include the [Altmark](#) criteria, such as objectivity, predictability, transparency and only reasonable profit.

Too big to fail?

Some raised the point that markets are not good at meeting a crisis, in the sense that if operators do not cope the market consequence is bankruptcy. However, bankruptcy is not seen as an option as the services provided in this sector are too essential to fail. Other industry stakeholders disagreed, mentioning the historic example of the UK's ANSP privatisation in the 1990s. Due to an economic recession and limitations on charge increases, the air navigation service provider went bankrupt. Its recapitalisation was financed in part by the government and in part also by the airlines, given their legitimate interest in its functioning. Therefore, if ANSPs must be recapitalised or effectively go bankrupt, this does not mean that the service will not continue to be provided. This viewpoint considers bankruptcy as a logical consequence of extreme financial stress, with bankruptcy serving to erase debt and providing a new beginning, returning to a sustainable financial structure.

Single European ATM? Unlikely for now

Overall, all stakeholders agreed that complete integration and centralisation of ATM services at the EU level, as proposed by some in the European Parliament, is not presently viable.

Several participants considered that this would be the most efficient and effective option but agreed that given states' interest in preserving their airspace sovereignty it is not a realistic approach.

These representatives considered, however, that this aim can be technically promoted by using virtual centres. They considered that the European airspace can technically be monitored by macro centres scattered around Europe taking care of all air traffic. Given this, the Commission stated that in the distant future there may be a single European service provider. However, this currently seems unlikely.

Regarding smaller integrations of designated ANSPs undertaken by national governments, the greatest hurdle identified was integrating civil and military ATM systems. This makes potential integration difficult, as some states may be concerned about confidentiality and the sensitive nature of their military information.

Next steps

To conclude, it is necessary to emphasise the importance of defining a clear vision of future ATM financing and identifying appropriate ways to achieve it. Without a shared understanding of the desired destination, any discussion of different mechanisms may be unproductive. This forum provided a platform to focus on establishing such a clear vision. Further discussion should involve member states, industry stakeholders and EU institutions to ensure that their efforts are aligned and purposeful to achieve the common objective of economically sustainable, environmentally friendly, efficient and dependable aviation.

ATM regulations and financing – we need a vision first

A Comment by Jan Klas, Director General, Air Navigation Services of the Czech Republic

The 19th Florence Air Forum aimed to answer four crucial questions related to current ATM. There were numerous answers from different points of view. I will focus my comments on one view, which was both explicitly and implicitly articulated during the forum and which fully or partly touches on all four questions:

ATM should now focus on a short- and medium-term increase in efficiency and minimisation of charges paid by users of ATM services.

I can understand the focus on this approach by all the industries represented at the forum, but I cannot agree with the approach without putting it in an appropriate context. The thesis is not new and its origin was not revealed at the forum. We may read it in different contexts as in many previous discussions. Its visibility is most significant in current legislative processes related to ATM, namely in discussions on SES+.

The Single European Sky, which was originally a real vision calling for a thorough transformation of a very fragmented European airspace into a seamless efficient system, is now broken into a random and inconsistent sequence of steps stemming from pressure from various interested parties. The lack of progress is obvious and the traditional formula (well-known both in the ATM and in the EU environments) is being applied of just renaming the vision rather than implementing or re-defining it. Accordingly, we could have heard new headlines such as digital or green sky. But digital is just a tool and green sky cannot be realistically achieved without going back to the roots and implementing a real single sky.

In these discussions, which are similar to what we could see during the forum, there are two significant lobbying groups:

- Airspace users, who would like to see the system modified so that it minimises costs and maximises the inflow of taxpayer's money (both via Single European Sky ATM Research and via direct national subsidies).
- Air navigation service providers, which do not have a unified vision of the future of ATM financing, many of whom support significant structural changes in ATM financing to enable liberalisation of ATM (while for those who receive some state financial support it is not an appealing idea or they just simply appreciate the status quo).

We can see that these two approaches represent the short term on the one hand (a view focussed on the current profit and loss situation) and the long term on the other hand (those in favour of increasing the capacity of the system). The views reflect particular interests in each of the two groups and their preferences. Both are perfectly understandable.

What is missing from the discussion is a third point of view. It is the role of a regulator to harmonise the two approaches. Let me expand on this particular role. The role of regulation and a regulator, which I completely miss in SES II + and in all other discussion on the topic, is to formulate and promote a long-term vision of a regulated industry, in this case ATM. A long-term vision is what should be behind the aforementioned initial theory. The crucial element in this vision is the mode of ATM regulation. It can be either a regulated business environment or a centrally controlled system. I prefer the former, but both are possible. What is not viable is the current situation in which the regulator attempts to merge elements of both modes.

Modes of regulation are always built on a system of financing the industry and its stakeholders. Without a clear, simple and effective financing system, the existing technical and operational visions cannot be materialised or will be implemented in the least efficient and most expensive manner. Unfortunately, this is what is currently happening.

Without a major change in the ATM financing system, we will continue to face an increase in chronic issues in this industry:

- A lack of long-term balance of (supply and demand for) capacity over time and in different regions;
- Volatile and unpredictable charges for ATM services.

And we will face new issues:

- A non-systematic blending of user-pay principles with random allocation of subsidies from national budgets;
- Money from European taxpayers will support airlines from other parts of the globe.

What should I expect from a change in ATM financing that can support long-term balanced development of European ATM and its stakeholders?

- ANSPs should be paid for the product they are required to deliver: capacity. The system should vary its infrastructure (capacity) and services – as is the case in other industries. ANSPs are infrastructure agents and they should be paid for the capacity they actually deliver – which they are required to provide. Actual services should then be charged by a capacity broker and the pricing scheme may be different from that for capacity.
- The system should enable ANSPs which do not deliver to be forced to leave the market in favour of those who do deliver.
- Another means of financing, which complements the user-pays principle, must be limited to crisis situations and must be applied consistently across the network.

A Change in the Air Navigation Service Financing System? What is the Purpose?

A comment by Kálmán Seregélyes, Head of Controlling and International Finances Department, HungaroControl

After the COVID-19 pandemic, discussion on a possible change in the air navigation service (ANS) financing system increased. Many held the view that the current performance scheme failed to address the main challenges that arose during the crisis and required adjustment. Discussion on how the system can be improved is very welcome, but it should be based on a systematic approach, i.e. 1) proper balanced assessment of the status quo, and 2) clear aims which are to be achieved by the eventual changes. This is logical, but in practice we often fail to stick to these simple principles.

Assessment of the status quo is far from unambiguous, which is why we should first define which dimensions we should use to judge its appropriateness. In my view, the very first thing to look at is whether the system was able to stay operational. The performance scheme passed this test. Although there were some adjustments, the underlying principles did not need to be modified and the performance scheme managed to handle the crisis. Certainly, the system had to adapt to the changing environment in several ways, such as:

- first and foremost, the pandemic changed the working environment and led to special working conditions in order to safeguard the health of employees;
- air navigation service providers (ANSPs) previously working without external financing had to apply for bank loans and obtain other forms of liquidity;
- in parallel, the drop in revenue led to cost cuts and cost-saving measures in the whole aviation chain.

Thanks to their efforts, stakeholders managed to keep the aviation system operational. The system played its part very well during the crisis

and helped Europe tackle the challenges posed by COVID.

Nevertheless, many had the impression that there were discrepancies in the system which required an adjustment. We need to identify them and agree on what we aim to tackle.

- We have to decide whether the adjustments we are seeking are for times of crisis or if they are instead meant for normal times;
- When we speak of financial challenges, do we mean liquidity, solvency or profit and loss-related issues?
- If it is about liquidity, what is the source of the problem: price, quantity, regulatory constraints or even accessibility? (The loan organised by EUROCONTROL is a very good example showing that not all states were interested in the jointly procured loan facility, and at the same time it is also proof that some – even states with very established financial markets such as the UK – needed the support.)
- There was no harmonised approach among states in the EU. Consequently, some of the challenges that arose for stakeholders may have been linked to national measures. This is not something to be solved with a general change in the ANS financing system.

The above examples clearly show that before changing the ANS financing framework, we need to be sure what we wish to achieve with the changes.

Furthermore, the performance scheme passed the test in that the immediate financial effect of falling ANSP revenue was not immediate unit rate increases. The basic principles of the system (i.e. differences compared to plans and eligible for future recovery ability can be built into the year $n+2$ price at the earliest) forced ANSPs to find other ways to finance liquidity issues. This certainly helped the recovery of traffic after the pandemic by postponing the financial effects of carry-overs (and this was particularly the case after the Commission spread the recovery period from 2 years to 5 or 7).

Naturally, the postponement had a price (interest), and I also understand that the airlines would prefer not just to have these amounts postponed but instead for somebody to finance them instead of themselves, such as states.

Thus, we have arrived at the point that often comes into focus in current discussions: public financing. While it would be easy to say that states should support aviation because it generally helps economic growth, there are also counter-arguments that it is better to have a fully user-financed system. The reactions of states to the pandemic show that, depending on national transport policy considerations, different measures were introduced during the crisis years, demonstrating that willingness and the appropriateness of state support is not an unambiguous point either. In fact, if we consider, that aviation is a catalyst of economic growth presumably in a larger area, such as the EU (rather than small states), one can find arguments that if there is a public share in ANS financing, it should come from the EU budget.

This, along with other topics, such as the traffic risk sharing scheme (which I also consider needs adjustment since it fails to comply with the principle that risk shall be borne by the party best able handle it), could certainly be a starting point for future discussions on how to change the ANS financing system. But only after setting clear aims that we want to achieve...

ATM Financing

A comment by Alex Bristol, CEO, Skyguide – Swiss Air Navigation Services Ltd

Our European air traffic management (ATM) charging scheme is no longer fit for its intended purpose. The underlying business model was conceived a long time ago and needs updating. There is little or no connection between cost drivers (primarily the number of crossing flight paths to manage, otherwise known as complexity of airspace) and the revenue earner (weight of aircraft and kilometres flown). There is therefore no connection between the value an air navigation service provider (ANSP) adds and the money it earns (the cash cow is an operation managing heavy long-distance overflights with few interactions between aircraft).

ATM financing operates according to a different philosophy to most other network industries in which infrastructure investments are often paid for, or subsidised by, the taxpayer and service provision is paid for by the user. In ATM, the airspace user is expected to pay for the infrastructure and for services.

ANSPs have a dual nature. They are part of a large international network and yet they also have an element of national public service and – usually – national sovereignty. This means that there are two different operating modes in one organisation, with different customers and stakeholders, and different purposes. This is not reflected in the way ANSPs are currently set up and financed.

During the COVID pandemic, most ANSPs were required by their respective states to keep providing most of their capacity all the time during the crisis as a function of the public service nature of part of their business (repatriation flights, cargo, state aircraft, military operations, etc.). And although commercial airlines did not need or use this capacity, they had to pay for it.

COVID further showed that the current European ATM system cannot respond to major shocks, and there is a risk that airlines will not have

finished paying back the costs of 2020 and 2021 before the industry hits the next crisis (which historically occurs approximately once a decade, on average).

ANSPs were also not able to significantly reduce their costs during COVID because the proportion of their costs which are fixed is very high (typically 90% or more). This means that an ANSP is only minimally able to respond to a significant crisis. There is technology on the horizon which would allow much more flexibility and scalability, but ANSPs are only starting out on this innovation path.

In sum, COVID raised our awareness that ATM is part of a country's critical national infrastructure and that states are important users and beneficiaries of this infrastructure.

Russia's war of aggression against Ukraine reinforces this COVID learning and shows that ATM forms part of critical national networks, with cyber security requirements becoming more important. ATM by definition has a civil-military character and the need to focus on national sovereignty will remain an essential part of European ATM for the foreseeable future.

Skyguide believes that the concept of core services of general interest (CSGI) recognises this fact and is a reasonable way of distinguishing between the minimum ATM infrastructure that a state requires to fulfil its International Civil Aviation Organization obligations and for any sovereign tasks (with the state as the user) and the additional ATM services delivered to airlines (with airlines as users). The concept of CSGI reflects much better the dual nature of an ANSP, differentiating between elements with the characteristics of national infrastructure and additional capacity providing services to airline and business aviation customers.

An ANSP's task is to make capacity available; if the demand is not there, this capacity remains unused. It is, however, still paid for by the airlines, which wish to use capacity at another time. The situation during COVID showed that this logic is flawed because the ATM system required airlines to pay not only for the very

limited capacity they required in 2020 and 2021 but for all the European capacity which was available and not used.

Significant capacity in Europe is available at the wrong time and in the wrong place, and demand often exceeds supply in certain airspaces. Future virtualised technological platforms should allow such capacity to be moved around and to be delivered in sectors in which demand outstrips the available capacity.

Progress towards such virtualised technologies is very slow, however – not least because the European performance scheme does not incentivise all the right behaviours. The current scheme, for instance, incentivises the creation of equipment assets and penalises buying of services, leading to an expensive European ATM with duplications of systems which are not interoperable. Skyguide believes that it is very important for the regulation in the next 5-year period to focus on setting the right incentives and encouraging ANSPs to accelerate innovations which will take us to a virtualised ATM system.

Europe needs to invest in its infrastructure to remain globally competitive. CSGI ensures the state of appropriate infrastructure over time, ensures national sovereignty and (cyber-) security, prevents European ATM from lurching from crisis to crisis and avoids even higher one-off costs to cope with future crises. Together with technology improvements it will play a complementary part in making European ATM more sustainable.

FSR Transport

The Florence School of Regulation (FSR) is a project within the European University Institute (EUI) focusing on regulatory topics. It works closely with the European Commission, and is a growing point of reference for regulatory theory and practice. It covers four areas: Communications and Media, Energy (Electricity and Gas), Transport, and Water.

The FSR-Transport Area's main activities are the European Transport Regulation Forums, which address policy and regulatory topics in different transport sectors. They bring relevant stakeholders together to analyse and reflect upon the latest developments and important regulatory issues in the European transport sector. These Forums inspire the comments gathered in this European Transport Regulation Observer. Complete information on our activities can be found online at: fsr.eui.eu

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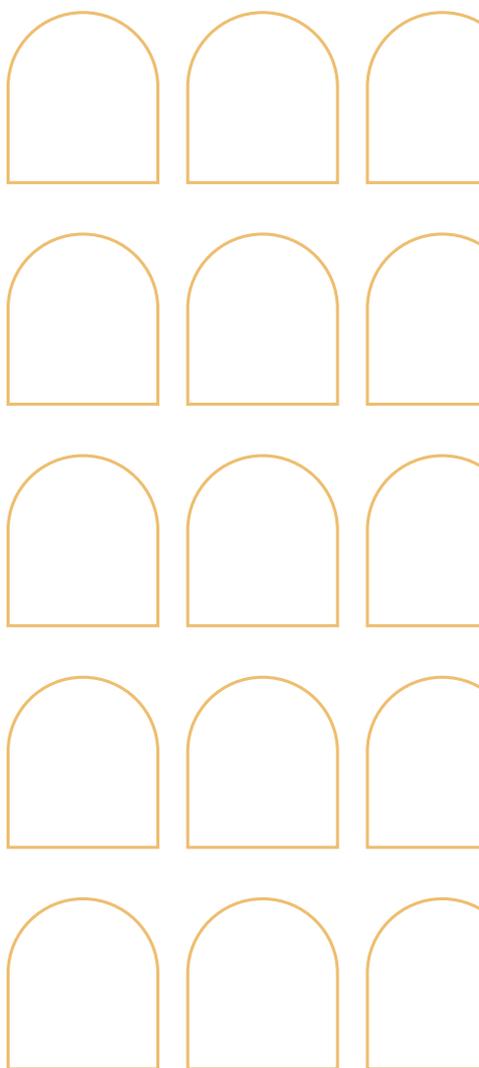
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