



**The Human Dimension: a key factor for the sustainable future
of the Single European Sky and RP3**

Executive Summary:

IFATCA is committed to a modern, state-of-the-art, innovatively driven, socially responsible and long-term sustainable ATM service provision at an acceptable cost for the users.

This paper represents IFATCA's view on how to proceed with the development of RP3 and, consequently, the Single European Sky. IFATCA's view is based on the reports from our Member Associations, who work within the ATM system on daily basis, and on our participation in the SES processes.

Through our involvement in the SES Performance Scheme, IFATCA has identified some worrying trends, in particular, regarding the long-term sustainability of the European ATM System. It is, therefore, time to reflect in which way the SES and especially the Performance Scheme shall continue. IFATCA believes that there is a need for:

- **Realistic and achievable SES Goals.**
- **A collaborative approach to achieving the goals.**
- **A Reduction of the bureaucratic burden.**
- **Invest in operational staff to handle both the infrastructure transformation in ATM and increase in traffic.**
- **Focus on technological changes that can bring capacity increase, using Eurocontrol's expertise for the implementation of technical projects.**
- **A significant reduction in the number of current projects.**

The extremely ambitious goals of the SES will not be met before 2020. Either we renegotiate the goals or we acknowledge that, with the current setup, the goals are unachievable and we lower the ambitions. Trying to implement a vast number of technological projects while asking for more capacity at a cheaper rate does not add up, something has to give. For example, an opportunity has been missed to increase capacity by focusing investment in interoperability and the cross-border exchange of data; it is easier to make technological boundaries disappear than national ones.

IFATCA has also received reports of missing investment in operational staff. This is a worrying trend and it will lead to additional problems for the European ATM system if not acted upon.

Without paying attention to the action items identified above, the ATM system will not be able to increase performance in an acceptable way for all the stakeholders. RP3 should be adapted accordingly to be able to reach the SES objectives, through the implementation of the adjustments proposed in this paper by IFATCA.

IFATCA is the worldwide organisation representing more than 50,000 air traffic controllers in more than 125 countries. IFATCA's goals are of professional nature, among which are the promotion of safety, efficiency and regularity in international air navigation and the protection and safeguarding of the interests of the air traffic control profession.

1. Introduction

The objective of the Single European Sky (SES) initiative is for the Air Traffic Management (ATM) system to achieve these high-level goals by 2020 relative to 2005:

- **A threefold increase in capacity where needed;**
- **Improve safety performance by a factor of 10;**
- **A 10% reduction in the effects flights have on the environment; and,**
- **Reduce the costs of ATM to the airspace user by at least 50%**

Since the beginning of SES in 2004 these goals have created pressure on the ATM industry to reduce costs. 12 years later it is arguable whether these goals have been met or not. Some improvements have been achieved, but it is clear that we have not reached the extremely ambitious goals of the European Commission. IFATCA is not opposed to ambitious goals, but is of the opinion that the targets set are beyond what is actually achievable and that there needs to be a realignment of the goals with the current reality.

Now that it is clear that the goals that were set will not be reached, what can we do?

From the conception of SES, IFATCA was of the opinion that it was, to some extent, heading in the wrong direction. Furthermore, IFATCA was concerned about the feasibility of achieving the extremely ambitious goals of the SES, whilst simultaneously centralising power and trying to implement resource-consuming projects.

The Federation believes that it should be the aim of the future evolution of the SES to create a modern state-of-the-art, innovatively driven, socially responsible and long-term sustainable service provision at an acceptable cost for the users. Attempting to achieve the ambitious goals without incorporating operational staff's understanding of the project is not the way forward. The centralised approach to organising the ATM industry has increased the administrative burden and introduced many technical projects, where it is highly unlikely that there will be a connection between the investment and the subsequent improvement of the ATM system's performance. The number of employees in administration within ANSPs and in Brussels has increased whereas the number of operational staff has remained the same or even decreased in some cases. If this skewed growth continues, the ATM system will not achieve the goals set.

IFATCA is of the opinion that the direction of the SES needs to be reconsidered and it is necessary to implement structural changes to the SES to help the ANSPs and other stakeholders to achieve the SES goals. It is necessary to prioritise the resources and to reduce the number of technical projects. Furthermore, it is necessary for the European Union to decentralise its power and allow Eurocontrol, where the necessary know-how is situated, to be involved in the implementation of the technical projects. Current centralisation has ironically led to further fragmentation as well as an unfocused plan for the SES.

IFATCA suggests the following priorities for the SES to pave the way for the achievement of the SES goals in a sustainable way:

- **Realistic and achievable SES Goals.**
- **A collaborative approach to achieving the goals.**
- **A Reduction of the bureaucratic burden.**
- **Invest in operational staff to handle both the infrastructure transformation in ATM and increase in traffic.**
- **Focus on technological changes that can bring capacity increase, using Eurocontrol's expertise for the implementation of technical projects.**
- **A significant reduction in the number of current projects.**

These principles should govern the work of the European Commission. If this is not done, it is IFATCA's view that the aviation industry, in another 10-15 years from now, will look back at another period where goals set were not achieved and a lot of time and effort was wasted on unimportant and unnecessary investments and projects with no long-term benefits.

2. Single European Sky and the Performance Scheme

In preparation for the regulatory environment for RP3, various activities have taken place. In June 2016, the Performance Review Body (PRB) published a White Paper on RP3 Performance Objectives. A4E and CANSO have also published their views on RP3. Stakeholder consultation has taken place in 2016 on 9.11. (PRB) and 14.12. (EC) on the RP3. Further workshops and consultation will continue during the first quarter of 2017. It is expected that first drafts of the future performance objectives will be available for discussion in the SSC by the 4th quarter of 2017.

It is therefore important that the PSO input and in particular IFATCA input is submitted in a timely manner to the discussion.

2.1 General IFATCA judgment of how the Performance Scheme has performed

Since its beginning, the political initiative SES was able to rely on the efficient and resilient sector of ATM. Although the ATM system has yet to achieve the goals of the European Commission, all parties involved have continued to provide air traffic control in a safe, expeditious and cost-conscious way. With the arrival of the Performance Scheme and its related objectives and targets set for the States, some form of regulation started to have an impact on the infrastructure. The 4 key performance areas (Safety, Capacity, Environment and Cost Efficiency) will continue to be the cornerstone of future reference periods and will lead to further changes. Those involved with the ATM sector are adapting to these new challenges. Between 60 and 70% of the costs are operating expenses (OPEX) and can be qualified as staff related costs. 58000 staff, of which about 18000 are air traffic controllers, are linked directly or indirectly to the Performance Scheme at the ground level.

Although IFATCA believes that the extremely ambitious goals of SES have not been met, IFATCA does acknowledge that when looking at the main achievements under the Performance Scheme RP2 first year (see volume 1 of PRB's 2015 monitoring report), the overall achievements are very positive. Safety has not been impacted negatively by the performance objectives, however capacity targets were not entirely met. The target for Key Environmental Areas (KEA) has been achieved and is at the level of carbon neutrality. From a unit rate point of view the target in cost efficiencies has been met. In other words, the European ATM system has continued to function normally with a respectable track record:

- **Safety 99,999999%;**
- **Quality of Service: ATM delay, 45 seconds per flight = € 2.885billion costs, compared to the cost of Dutch Road delay, which is € 2.3-3.0 billion only in The Netherlands;**
- **Carbon neutral (CO₂) Environment target in 2015 was below 2%, which was agreed by ANSPs (See CANSO statement on Aviation impact).**

2.2 Negative trends observed by IFATCA at the beginning of RP2

IFATCA and its member associations have observed some negative trends under the current Performance Scheme. The list is by no means complete, but is an indication of some of the longer-term problems that IFATCA expects to emerge:

- **Insufficient operational staff;**
- **Increased bureaucratic burden and ANSP focus on SESAR projects with limited operational improvements;**
- **Short-term focus;**
- **Reduction of effective capacity;**
- **Difficulties in adapting to changing traffic patterns.**

Insufficient operational staff

In an attempt to live up to the ambitious SES goals, most of the ANSPs have started to look at their cost base and have adapted rapidly to the new pressure on cost control exerted by the Performance Scheme. Cited in the reports of our European Member Associations (MA) affected by the SES, the measures taken by the ANSPs vary from cost cutting measures aimed at operational staff, including salary and working conditions reductions, to requests for more subsidies by the government and requests for public funding (under the SESAR deployment scheme).

The result of not having sufficient staff available can be observed in the increase of the delay figures throughout Europe. Some novel approaches to cope with periods of peak traffic increases are being introduced. These include 7-hour single person operations in air traffic control towers without a break and increased retirement ages, in order to have more manpower available on an ad-hoc basis. These novel approaches are introduced in certain cases without the required systemic safety management approach. Furthermore, the staff shortage leads to the reduction of ATCOs and ATSEPs available for the evaluation of whether technical projects will bring the wanted benefits as well as for the implementation process.

Increased bureaucratic burden

Due to the new regulatory burden of the SES and Performance Scheme at national and company levels, investment in non-operational staff has increased the cost of personnel, whereas the cost targets required a reduction. Centralisation by the EU, for example Functional Airspace Blocks (FABs), and a steady increase in rules and regulations as well as the slow deployment of inefficient technology has caused an increase in costs within the ANSPs. A comparison between the European and the US ATM system reveals that the ratio of non-operational staff in Europe to operational staff, is double that of the numbers within the US. (1:2.1 versus 1:1.05). It is IFATCA's opinion that the administration of European Air Navigation Services (ANS) is cumbersome, complex and a manpower heavy process. If nothing is done to ease the process and reduce the number of staff occupied with administration, it will be difficult to achieve any cost-effectiveness improvements.

Short-term focus

There is an observable trend that the Performance Scheme has caused ANSP to focus on short-term measures to comply with the target set at national and local level, losing sight of the long-term evolution of the overall system performance. In an industry where long life cycles are required due to the specificity of the sector, it certainly shows a worrying trend. Of particular concern is the fact that the Performance Scheme has led to ANSPs manipulating Capacity Expenses (CAPEX) funds to increase revenue, relying heavily on overtime, introducing new questionable rostering practices and attacking pension schemes (both pensionable age and the pension fund).

Reduction of effective capacity

Capacity has been reduced by ANSPs to meet cost efficiency targets. This has been achieved by slowing down or stopping the hiring of ab-initio operational staff and by counting on overtime (voluntary or enforced) to cope with peak traffic situations.

Difficulties in adapting to changing traffic patterns

Unexpected traffic shifting, due in part to political problems, together with an overall traffic increase has led to an increase of peak time traffic and problems with ANSP financing. Further, the changes in behaviour of airspace users, which are controlled mainly by costs, are generating unpredictable changes in traffic patterns.

In conclusion

From an output point of view, the current Performance Scheme has been partially successful in the first year of RP2 in the 4 Key Performance Areas (KPA's). This relatively positive balance has been achieved at a moderately high price for the employees in the ATM sector. Whereas the operational staff performance has been the main contributor to this successful result, it is not acknowledged what sacrifice some of the operational staff involved had to make to achieve such a result. As a consequence, IFATCA urges the European Commission and the members of the Single Sky Committee (SSC) to change the priorities of the SES.

3. The further evolution of the Single European Sky Performance Scheme – RP3 in particular

3.1 The need to create a common agreed and shared vision for the future of the SES

The Performance Scheme has become the cornerstone of the reform process and its initial impact has been on operational staff. IFATCA has observed that there is no adequate long-term vision for the ATM system or agreement of where the Performance Scheme is heading. The PRB has outlined that, at the beginning of RP5 (around 2030), the full-fledged impact of the current Performance Scheme is to be deployed. In parallel to SESAR deployment, this should lead to the achievement of the political ambitions of the European Union (50% of costs, double capacity, 10 times increase in safety and 10% reduction of CO₂), which were formulated at the start of the SES initiative in 1999.

Apart from a report from SESAR, no other European institution has created a long-term vision for the Performance Scheme. The European Commission has never revised its political ambition despite a changing geopolitical environment, a lower than forecast increase in traffic and other political changes (e.g. BREXIT) affecting the overall economy and the aviation sector in Europe.

IFATCA therefore calls for a thorough discussion of the long-term ambition of the SES and the contribution of the Performance Scheme to those ambitions. Looking in isolation at the development of performance indicators for RP3 will limit the overall impact of Performance Scheme to some areas. This will not lead to the performance stipulated in the SES goals.

IFATCA believes that it should be the aim of the future evolution of the Performance Scheme to create a modern state-of-the-art, innovatively driven, socially responsible and long-term sustainable service provision at an acceptable cost for the users.

3.2 What is missing in the current Performance Scheme?

Change management or a roadmap for change

The current Performance Scheme has created tension in the balanced approach of Air Traffic Control's primary mission, which according to ICAO, the EC and Eurocontrol is: safe, efficient, orderly (predictability), at a commensurate cost for the users and socially sustainable.

Change management is still missing from the SES and needs to be better captured. Substantial funds are being made available through the SESAR deployment phase and will lead to changes in the operational world. Technology driven changes have affected or will affect the ANSPs during RP2 and RP3. The infrastructure modernisation plans of the ANSPs are only assessed via the cost efficient Key Performance Indicator (KPI), which sets the wrong incentive for further required technological change. Some of the grants made available for the modernisation of the ground infrastructure should be reimbursed during RP3, which will increase the financial pressure on the ANSPs. Therefore, it is important that RP3 includes performance indicators which capture the way the new technology is being deployed and whether it works as intended or not. A roadmap for change becomes urgent in order to properly manage and prioritise the modernisation of the ground infrastructure. Unmanaged change will constitute a major cost and will pose a risk to the future of the SES Performance Scheme.

With the exception of the PRB study on the possible impact on interdependency, no work has been carried out on the very important aspect of the overall output of the system. This has led to a very complex and potentially unviable Performance Scheme. States and ANSPs spend a lot of resources simply on trying to understand and complying with the current targets. This leads to undesired outcomes as outlined above, which highlights the need to have a more sustainable and long term approach. This approach should foster interoperability and assess the interdependency of the various KPAs. In particular, the current route charging mechanism and charging regime regulation has created unwanted behaviour by users and ANSPs. Instead of providing the best possible service to the users from a capacity and predictability point of view, it has led to the distortion of the overall network efficiency (further highlighted by low fuel costs). The impact of the charging regime on the future of the Performance Scheme should be neutralised, while remaining sustainable for all stakeholders. Novel approaches such as passenger taxes and a one off cost per great-circle distance, where airspace users pay a fixed fee from airport to airport independent of the route flown, should be proposed and discussed before determining the next set of Performance Scheme targets.

The ATM Masterplan counts on the maturity and willingness of the various stakeholders to invest into elements of the ground infrastructure. This has, until now, not led to the necessary standardisation of the ground infrastructure and will keep the ANSPs and operational staff busy with continuous change programs, without proper planning and roadmaps in place. A roadmap for change and the setting of priorities are necessary to achieve the overall goals that IFATCA stated when the SES was introduced.

IFATCA has called for such a roadmap for change for more than five years and is convinced that if the EC and the SSC do not create a realistic and achievable change roadmap, the expected capacity gains from innovative ideas and new technology will not be met.

IFATCA believes that Air Traffic Controllers are the key enablers for the future innovation in the sector. There is, however, a need to involve the Air Traffic Controller from the outset in the design, development, validation and deployment work for any new and innovative technology. It is the only possible way to achieve the technological change that can bring an increase in capacity while at the same time achieving a significant reduction in the number of current projects.

4. The evolution of the Performance Scheme - a few proposals

Although the initial goals of the SES have not been achieved, the current ATM system is robust and has evolved in an adequate way. Despite that, innovative solutions and technological developments are essential if the European ATM system wants to maintain the current progress over the coming decades. The Performance Scheme could continue to be an important tool to improve the performance of ANS in Europe. To date, the Performance Scheme has increased collaboration between ANSPs, which has contributed to further improvements to the overall performance, without jeopardising the current system. This as such is a big achievement. RP3 should be adapted to the overall goals in chapter 1 to be able to reach the SES objectives.

IFATCA suggests the following changes to the Performance and Charging Schemes for RP3:

Simplification of the Schemes:	Create an EU-developed bandwidth of targets, which are then adjusted to the local context by the NSA and ANSP. This will assist in making the schemes less cumbersome. FABs will disappear as institutions of economic coordination.
Roles and Responsibilities:	The EU will be responsible for setting the longer-term ambitions / strategic goals and for monitoring the harmonised application of the regulatory framework mainly through the PRB. The legislator should be the European Parliament (EP), the States shall enforce the Performance Scheme and Eurocontrol should play a role as technical agent.
Duration of the Reference Periods:	IFATCA suggests creating two paths for the duration of the reference periods. One for the economic regulation and one for the investment plans and safety. Investment needs to be observed in a perspective further than just that of the economic regulation.
Scope of the Scheme:	The targets of the Performance Scheme should be of a more holistic nature. Gate-to-gate is one option, but the most important issue for IFATCA is that it requires teamwork of all stakeholders and new goals (see chapter 1) for the SES to be able to achieve its overall goals.
Target-setting Mechanism:	Target setting should be created at EU level and decided upon in the SSC based on the work completed by the PRB and the Network Manager (NM). Supervision and approval will be completed at national level. The purpose of the FABs will change; FABs will be a vehicle for technical collaboration.
Incentive/Penalty Schemes:	Incentives have caused strange ANSP behaviours. Some ANSPs have reached their targets and got bonuses for their performance – without contributing to the EU wide targets. CAPEX has been mainly used to achieve the cost effectiveness targets. IFATCA do not favour incentive schemes.
Traffic Forecasts:	IFATCA suggests a central risk sharing mechanism in which all stakeholders, including airspace users, would contribute. It could work as a form of insurance and would reduce the economical and operational risk of traffic fluctuation.
Infrastructure Investment:	This is an essential part of the Performance Scheme. An investment plan together with a strategy on how to change the ATM system is necessary to be able to reduce the pressure on the ANSPs. If the target is a ‘performance driven approach’, rather than an ‘industry driven approach’ to technological change, the involvement of operational staff in the evaluation process of technology implementation must be an ongoing consideration. The know how to decide whether technological investment makes sense or not is mainly at the operational level.
Human Dimension1:	To facilitate and evaluate the implementation of technical projects as well as being able to deliver the desired capacity increases, it is necessary to invest in the education of ATCOs and ATSEPs. IFATCA believes a target of 5% surplus of operational staff will be required to enable this education.
Human Dimension2:	IFATCA suggests implementing an indicator that measures the existence and quality of the social platforms that have been created. Furthermore, the ANSP’s use of operational overtime and the percentage of staff involved in projects from SESAR to front-line should be considered as additional indicators.
Cost-efficiency KPA:	IFATCA is not opposed to a price cap on ANS, but a price cap has to be accompanied by achievable SES goals as mentioned in the introduction. There have to be proper economical and safety margins put in place in order to ensure that the ATM system is robust and resilient.
Safety KPA:	IFATCA supports the European Aviation Safety Agency’s (EASA’s) Safety KPI paper.
Capacity KPA:	A holistic approach to measuring capacity is necessary. This means gate-to-gate and identification of bottlenecks. Measurement of capacity in the areas where there is a need for increased capacity is paramount.

Environment KPA:	According to the experience of IFATCA members, vertical flight efficiency measurement will only complicate the ATM system and will reduce overall efficiency. It is doubtful whether vertical flight efficiency brings any environmental improvements. The possible evolution of the noise regulation of the EC might have to be included during RP4.
The Charging Scheme:	Neutralise the negative impact of the charging regime on the capacity and environmental KPAs by introducing novel approaches to en-route charges. The current scheme is unfair, e.g. it favours countries with simple and large airspaces.
Network Manager:	Set a KPA to transform the NM from a capacity mediator to a capacity broker. This will have to be aligned with the revision of the NM implementation regulation. IFATCA believes the NM cannot be run by industry and shall therefore remain a national structure, as is currently the case.
FABs:	Introduce traffic density and complexity areas instead of FABs. It has been proven that the FABs are hindering the deployment of performance rather than improving them, namely by creating an additional institutional fragmentation at increased costs. There are only a limited number of sectors in Europe causing delays or flight inefficiencies at the environmental level. They could be resolved with targeting these choke points with innovative approaches.

5. IFATCA Summary

IFATCA is committed to a modern, state-of-the-art, innovatively driven, socially responsible and long-term sustainable ATM service provision at an acceptable cost for the users.

This paper represents IFATCA's view on how to proceed with the development of RP3 and, consequently, the Single European Sky. IFATCA's view is based on the reports from our Member Associations, who work within the ATM system on daily basis, and on our participation in the SES processes.

Through our involvement in the SES Performance Scheme, IFATCA has identified some worrying trends, in particular, regarding the long-term sustainability of the European ATM System. It is, therefore, time to reflect in which way the SES and especially the Performance Scheme shall continue. IFATCA believes that there is a need for:

- **Realistic and achievable SES Goals.**
- **A collaborative approach to achieving the goals.**
- **A Reduction of the bureaucratic burden.**
- **Invest in operational staff to handle both the infrastructure transformation in ATM and increase in traffic.**
- **Focus on technological changes that can bring capacity increase, using Eurocontrol's expertise for the implementation of technical projects.**
- **A significant reduction in the number of current projects.**

The extremely ambitious goals of the SES will not be met before 2020. Either we renegotiate the goals or we acknowledge that, with the current setup, the goals are unachievable and we lower the ambitions. Trying to implement a vast number of technological projects while asking for more capacity at a cheaper rate does not add up, something has to give. For example, an opportunity has been missed to increase capacity by focusing investment in interoperability and the cross-border exchange of data; it is easier to make technological boundaries disappear than national ones.

IFATCA has also received reports of missing investment in operational staff. This is a worrying trend and it will lead to additional problems for the European ATM system if not acted upon.

Without paying attention to the action items identified above, the ATM system will not be able to increase performance in an acceptable way for all the stakeholders. RP3 should be adapted accordingly to be able to reach the SES objectives, through the implementation of the adjustments proposed in this paper by IFATCA.

IFATCA is the worldwide organisation representing more than 50.000 air traffic controllers in 137 countries. IFATCA's goals are of professional nature; among which are the promotion of safety, efficiency and regularity in international air navigation and the protection and safeguarding of the interests of the air traffic control profession.