
Accelerating the implementation of the Single European Sky

(Text with EEA relevance)

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1. INTRODUCTION

1.1. Reaffirming the objectives of the Single European Sky

The European aviation industry plays a vital role in the European economy, by promoting trade and tourism and acting as a vehicle for employment growth. Air traffic control is a key factor in the value chain of the aviation industry. It should ensure the safe, expeditious and cost-efficient flow of air traffic thereby minimising fuel usage, carbon emissions and flying times.

However, European air navigation services have historically evolved primarily within national borders, with each Member State establishing its own Air Traffic Management (ATM) system leading to costly and inefficient structural fragmentation of the Europe's airspace and a persistent lack of responsiveness to the requirements of its customers – the airlines, and ultimately, the paying customers.

In 2004\(^1\), the EU launched the Single European Sky (SES) initiative with a threefold objective: "to enhance current air traffic safety standards, to contribute to the sustainable development of the air transport system and to improve the overall performance of the European ATM system and air navigation services"\(^2\). The commitment to these objectives was further enforced by formulating high level goals to be achieved by 2020\(^3\). A major project to modernise the technology behind the European ATM system was launched in 2007 (the SESAR\(^4\) project). 2009 saw the addition of additional concrete tools to drive performance and steer the reform of the European ATM system\(^5\): a revised approach to stimulate integrated service provision, a process of target-setting for performance objectives and the establishment of the Network Manager to coordinate action at the European network level. A five-tier approach was finally devised to cover the various aspects of SES: safety, performance, technology, airports and human factor.

The achievement of the SES is one of the key priorities of the European Commission's overall transport policy\(^6\). But although all Member States remain committed to the SES, implementation still falls well below the original expectations, and accelerating the process of reform of the European ATM system through a new package of measures was identified in

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\(^2\) Regulation (EC) No 549, Article 1(1)

\(^3\) A three-fold increase of capacity, an improvement in safety by a factor of 10, a 10% reduction in the effects flights have on the environment and a reduction of the cost of ATM services to airspace users by at least 50%

\(^4\) Single European Sky ATM Research


\(^6\) Refer to Annex I of COM(2011) 144 final
2012 as a key action for the development of the Single Market\(^7\). Air traffic delays have been reduced (partly as a consequence of the financial crisis which has reduced air traffic in Europe). But while safety levels have been constantly maintained, cost-efficiency has not improved quickly enough, and the environmental impact of sub-optimal flight profiles remains significant. At a time when European airlines are facing tough competition globally and aviation growth is shifting towards the Middle East and Asia-Pacific regions, it is hard to ignore the untapped potential gains of the SES, amounting to €5 billion per year\(^8\). The faster the Single European Sky is implemented, the quicker the expected returns will materialise. The latest forecast indicates there will be 14.4 million flights by 2035 in Europe, 50% more than in 2012. Air traffic growth will put a strain on ATM capacity and exacerbate the misalignment between ATM capacity and airport throughput\(^9\) where nearly two million flights would not be accommodated because of airport capacity shortfalls\(^10\).

The implementation of the SES and associated reform of the European ATM system must be accelerated, helping our airspace users in a tough global competitive environment, and facilitating future economic growth. So the Commission, building on the experience of the SES so far, is proposing a carefully targeted further legislative proposal to facilitate early implementation of the SES, a legislative package consisting of the recast of the four regulations creating the Single European Sky and the amendment of the regulation establishing the European Aviation Safety Agency (EASA\(^11\)).

### 1.2. Evolution of the performance of air navigation services

At the end of the 1990s, Europe faced major delay and inefficiency in the provision of air traffic control services. More than a decade later, fragmentation of the European airspace remains high, with 50 air traffic control centres in the 29 different Air Navigation Service Providers (ANSPs)\(^12\).

In 2011, the total direct and indirect costs for air traffic control in Europe amounted to some €14 billion. The direct costs alone (levied in the form of user charges) account for more than 20% of the total operating costs, excluding fuel, of the most efficient airlines. Generally speaking, direct air traffic control costs are the third largest item (after fuel and airport charges) for airlines.

Productivity (measured in air traffic controller-hours) has increased by some 18% in the last decade, but the overall employment costs for air traffic controllers have risen faster (by almost 40%). Total air traffic control costs rose by 10%, and the number of European air traffic controllers has risen to around 14500. These however remain only a third of total staff employed by ANSPs, indicating a very high number of support staff (around 30000 in 2011).

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\(^{7}\) COM(2012) 573 final

\(^{8}\) Based on estimates documented in reports by the Performance Review Body of the Single European Sky and the Performance Review Commission.

\(^{9}\) Refer to paragraph 11 of COM(2011)823 final. "Increasing capacity in the air will be pointless if airport capacity does not remain aligned with ATM capacity".

\(^{10}\) Challenges of Growth 2013, EUROCONTROL – June 2013.

\(^{11}\) Whereas the Commission Roadmap on implementation of the Joint Statement of the European Parliament, the Council of the EU and the European Commission on decentralised agencies, of July 2012, requires the standardisation of the names of all EU Agencies to conform to the same format, for reasons of clarity, this Communication uses the currently existing name of the European Aviation Safety Agency (EASA) throughout the text. The texts of the legislative proposals themselves have been adapted in accordance with the new Joint Statement and Roadmap to use the standardised name "European Union Agency for Aviation (EAA)".

\(^{12}\) The geographical scope of the SES extends over non-EU Member States, like Switzerland and Norway, that have committed to implement it through bilateral and multilateral agreements.
Even with the observed decrease in air traffic, which has eased the pressure on the system, capacity has been stagnant: the average total air traffic control delay per flight was roughly the same in 2011 as 2003. Environmental performance depends on flight efficiency, i.e. the opportunity given to airspace users to fly along the more direct routings. Full success in this field is still to come and costs of gate-to-gate insufficiencies due to additional fuel and flying times are estimated at €3.8 billion in 2011. ATC shows a good safety record and work is in progress to strengthen the implementation of safety programmes, management systems and analysis methods.

2. ENFORCING AND IMPROVING EXISTING RULES

In the last revision of the SES legal framework in 2009, the Commission focused on the need for a radical improvement of the performance of the air traffic control system. The delivery of the performance objectives should indeed be seen as a primary ambition in setting up the Functional Airspace Blocks (FABs), the management of network functions (Network Manager), and the SESAR project.

All have advanced over the last two years. Targets for the first reference period (2012-14) of the performance scheme were decided upon in 2011 and the scheme itself entered into force in 2012; the Network Manager\textsuperscript{13} became operational in 2011; and the deadline for shifting to a more integrated operating airspace, based on FABs, arrived in December 2012. The SESAR Joint Undertaking, whose task is to oversee the development of SESAR, has started to deliver the elements of the new ATM system. Finally, the deadlines for some other key measures (such as datalink and aeronautical data quality) have also been reached but in a number of cases, implementation lags behind schedule.

The activity level coupled with the implementation of SES has been high in the last two years, but the delivery of the expected benefits can be generally considered insufficient. The performance plans agreed at the EU level for 2012-14 would generate savings of €2.4 billion over the three years. Planned contributions from Member States have however not matched this overall target, leaving a shortfall of €189 million. Furthermore airspace users dispute the validity of these figures, arguing that inflation, carry-overs and risk-sharing resulting from previous years will in fact lead to a substantial increase of their costs in 2014. The Network Manager has performed well, but its functions remain limited, in particular with regard to the adoption of concrete remedial actions. Finally, while the Member States have agreed to set up nine FABs, they remain essentially institutional and administrative endeavours and do not yet provide concrete operational gains.

Existing legislation already goes some way in addressing these issues with powers given to the Commission to define and enforce implementing measures. The performance and charging schemes have recently been revised to modernise them in the light of the experience of their first application. The Commission must set performance targets based on existing legislation for the next reference period (2015-2019) by the end of 2013. Governance mechanisms for SESAR deployment have been introduced paving the way for the selection of a deployment manager and the launch of the deployment process in 2014.

The Commission is determined to ensure implementation of the SES in all aspects, and has therefore taken preparatory steps to launch infringement procedures against Member States who have thus far failed to comply with the requirements for the establishment of FABs.

\textsuperscript{13} Eurocontrol was nominated Network Manager through COMMISSION DECISION of 7.7.2011 on the nomination of the Network Manager for the air traffic management (ATM) network functions of the single European sky (C(2011) 4130 final)
Similarly it will not hesitate to take further actions if the lack of implementation of some interoperability measures is confirmed, e.g., datalink services.

**But most essential of all, accelerating the implementation of SES requires that ambitious performance targets, in particular in the capacity and cost-efficiency areas, are set in the second and third reference periods of the performance scheme. In this context, more attention will be paid to performance from a gate-to-gate perspective. It will be increasingly difficult to deliver the required level of performance in a network characterized by a higher number of air traffic control centres and airports facing serious congestion issues. The Commission will therefore continue to closely monitor the evolution of air traffic and its impact on ATM and airport capacity in Europe to ensure that the required capacity gains are timely delivered.**

3. **ENHANCING THE EFFICIENCY OF SES**

3.1. **Focussing ANSPs on customer needs: delivering on performance**

The performance scheme is the key enabler for measuring the achievements of the Single European Sky. Based on a system of target setting, planning, monitoring and reporting in the four key performance areas of safety, environment, capacity and cost-efficiency, the performance scheme establishes the framework under which service providers are compelled to change in order to provide better services at lower costs. For example the cost targets effectively set a price cap on the services, above which the service providers may not charge users, thus forcing them to be more cost-effective.

The implementation of the scheme in the first reference period from 2012-2014 will lead to some tangible results in form of efficiency gains. Together with environment and capacity targets, flights will be more direct and delays reduced. At the same time it is also clear that more could have been achieved: the initial targets proposed by the Commission and the Performance Review Body for the first reference period were reduced in the approval process in the Single Sky Committee where Member States vetoed more ambitious targets; and,- see above- the final performance plans fall short by a small but significant amount, further, reducing, the overall level of ambition.

Experience also shows that Member States, which are either sole or majority owners of service providers, have a strong tendency to focus on healthy revenue streams of the user-financed system of air traffic control services, and can be therefore reluctant to endorse fundamental change towards a more integrated operating airspace which brings risks of strikes or possible repercussions for cash-strapped national budgets.

Against this background, the performance scheme needs to be strengthened to increase transparency and become more enforceable; to make target setting more technical and evidence based; to increase the independence of the Performance Review Body as the key technical adviser, and finally to reinforce control by the Commission and enable sanctions when targets are not met. In parallel airspace users should be given a stronger role in the process.

**Under the current system, Member States in the Single Sky Committee have the ultimate say on targets, the adoption of performance plans and the acceptance of corrective measure in case targets are not reached. In its legislative package, the Commission is proposing to strengthen control and sanction mechanisms. Furthermore, members of the Performance Review Body should henceforth be directly nominated by the Commission, to ensure impartiality.**
3.2. Increasing the efficiency of support services

The first SES package of 2004 aimed to introduce market mechanisms for the provision of support services, in order to improve their efficiency\textsuperscript{14}. Little in practice has been achieved although in the two cases\textsuperscript{15} where such measures have been taken- in Sweden and the UK - the results have been positive (one of the ANSPs estimated the saving to be around 50% compared to internalised provision of support services). So more could and should be done to delegate the provision of support services to specialised providers.

Introducing market mechanisms, where possible, is fully in line with what is being done elsewhere in European infrastructure industries, either by competition within the market or competition for the market under tender procedures providing time limited concessions. A progressive opening of support services to competition will not only provide new business opportunities to the ATM industry and beyond but also allow a quicker and less expensive implementation of new technologies. On the most conservative estimate based on recent experience, roughly 20% savings can be expected in respect of support services.

Clearly introducing competition in, all ATM services would not be appropriate. The Commission's analysis indicates that the core air traffic control services are natural monopolies at least under current technology: it is not feasible e.g. to have two control towers at a single airport or two controllers in the same sector competing for business. In theory, tender procedures offering concessions for limited periods of time could be considered for these core services, but these would require strong economic regulation and oversight.

However, support services, such as meteorology, aeronautical information, communication, navigation or surveillance services are more practical propositions. There are many companies inside and outside the ATM world who could offer such services, which could be divided between several providers to maximise competition, or – as recently suggested by Eurocontrol in its analysis of the concept of "centralised services", attributed to a single provider or a grouping of service providers that could support several core providers.

The Commission is of the opinion that market mechanisms should be introduced to increase efficiency in the provision of support services. In this legislative package the Commission proposes to pursue the separation and market opening of certain of these support services mentioned above.

3.3. Strengthening the independence of National Supervisory Authorities' (NSA) independence

NSAs have a major role to play in the implementation of SES. Their tasks have gradually increased since their establishment in 2004 and most are still developing their organisation and capabilities to match. Their primary responsibilities cover verifications of compliance of the ANSPs, which involves the supervision of safe and efficient service provision, organisation of proper inspections and the conclusion and implementation of agreements on the supervision of ANSPs within FABs. NSAs also cooperate to ensure supervision of ANSPs providing services in another State. Finally, they prepare, oversee and monitor the ANSP performance plans, this new task becoming more and more important.

A number of difficulties in the implementation of SES can be attributed to NSA difficulties – to inadequate resources, to a lack of expertise and a lack of independence from both

\textsuperscript{14} Regulation (EC) 550/2004, recital 13

\textsuperscript{15} Swedish air navigation service provider LFV and Highlands and Islands Airports (HIAL) outsource many of their support services
governments and ANSPs. This has affected both the processes of certification and oversight of ANSPs, as well as in the preparation and implementation of the performance scheme. Failing to address these shortcomings will significantly risk the implementation of the SES.

The problem of inadequate resources has a direct impact on technical skills and weakens the independence of the regulatory body vis-à-vis the ANSP, and should be resolved by strengthening mutual co-operation between NSAs (for example at FAB level), by more intensive coordination between NSAs at EU level allowing them to exchange best practices and participate in training programmes and by the pooling of experts for example under EASA auspices. Greater financial autonomy will make it possible to tackle the existing staff shortages.

NSAs have to perform their duties with impartiality and independence. While existing legislation requires that "this independence shall be achieved through adequate separation at the functional level at least"\(^{16}\) between NSAs and ANSPs, most of the States have opted for a structural separation. Nevertheless, even this has not always delivered, especially when the resources and expertise remain inadequate, resulting in a stronger influence by the ANSPs. The Commission therefore proposes a set of binding criteria in order to ensure the autonomous and effective operation of NSAs.

In this context, the Commission believes that the regulatory framework dealing with the efficiency and independence of NSAs should be reinforced as a matter of priority and will propose specifically binding criteria relating to the independence and capacity of NSAs.

4. REMOVING THE FRAGMENTATION OF THE EUROPEAN ATM SYSTEM

4.1. Enabling industrial partnerships

Functional Airspace Blocks (FABs), are intended to combat fragmentation of the airspace by establishing co-operation between ANSPs, optimising the organisation and use of airspace through design of optimal control sectors and routes over larger areas and hence achieving overall synergies through economies of scale. In 2009, a binding deadline of December 2012 was set for Member States to establish FABs including a series of detailed and binding criteria related to improved performance in service provision.

Whilst a lot of work by the Member States and their ANSPs has been done to create FABs, progress has been disappointing. Nine FABs have been announced, but in fact none of them are fully operational, and most seem intended to fulfil formal requirements, rather than developing synergies or economies of scale.

Real - as opposed to merely institutional - FAB developments have often been blocked, because of fears that the revenue stream from air navigation charges would fall, in some cases by over 30 %, if these FAB developments were to be implemented and services would be rationalised by e.g. shortening routes. Strong opposition from staff, defending their current staffing levels has been an additional issue for States to confront in that respect.

Furthermore, claims of national sovereignty problems have been made to protect existing monopolies, in the name of protection of military infrastructure, objectives, and operations in European airspace. While genuine military needs are justifiably protected under the Single European Sky, the precise line between those valid needs and undue protection of national interests has often become blurred. Finally, the treatment of existing long-term amortisation and investment plans on technical infrastructure has also proved too sensitive for States to

\(^{16}\) Article 4(2) of Regulation (EC) No 549/2004
handle, despite the existing regulatory requirement to achieve optimum use of resources in FABs.

The Commission will continue to pursue infringement cases against Member States in relation to the FABs, particularly those where progress towards reform is not demonstrated clearly in the coming months, and remains committed to the adoption by FABs of organisational models suitable for a more integrated operating airspace. FABs may now actually need more flexibility by making it legally clearer that they can pursue more variable co-operation arrangements between ANSPs to exploit synergies and team up with different partners for different projects to improve performance. These arrangements could cover common procurement, training, support services or delegation of services. The Commission proposes to modify the rules to enable FABs to pursue such projects. The precise manner of improving performance should be left to the choice of the industry participants, as long as performance improvements are realised.

The Commission is proposing in this legislative package to further develop the FAB concept so that it becomes a more performance driven and flexible tool for ANSPs, based on industrial partnerships, to achieve the targets set by the SES performance scheme. More emphasis will also be put on the central Network Manager as regards overall airspace management (see section 4.2)

4.2. Reinforcing the role of the Network Manager

The Network Manager for the EU ATM network, which has been operational since 2011, is a major player in the implementation of SES. A growing number of functions and services in the European ATM system could in fact be performed in a more centralised manner. Eurocontrol has been designated by the Commission as Network Manager, and has performed well17; in its capacity as Network Manager, it has as a key remit the prevention of bottlenecks in the airspace and system overloads on a day-to-day basis, as well as the facilitation of direct routings of aircraft. These functions thereby directly support ANSPs in meeting performance targets related to capacity and flight efficiency. The Network Manager's role is recognised by all stakeholders as essential.

Promoting the network dimension in strategic and operational terms requires very close cooperation across all operational stakeholders. However, whilst the original intention was to create strong industry-led governance with clear executive powers, in practice the Network Manager tends to decide by consensus, which often results in weak compromises. The concept of an industrial partnership for improved service provision should be taken as an objective which would also fit with the further reform of Eurocontrol (see section 5.2). Thereby the air navigation service providers and airspace users would participate in the Network Manager as a kind of joint venture. This model ensures the separation from regulatory bodies as it turns the Network Manager away from the role of an intergovernmental organisation and towards a normal air navigation service provider. Furthermore it favours investments in the Network Manager consistent with the business plans of operational stakeholders, as the industry partners will see the organisation as part of their own business and will hence be more prepared to invest in its operation.

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17 The Network Management Function (NMF) was established under Commission Implementing Regulation (EU) No 677/2011, and Eurocontrol was nominated as the Network Manager (NM) through a Commission Decision of July 2011
Furthermore, the current Network Manager operations cover only a subset of functions and services needed for the optimisation of the performance of the network. A gradual extension of the NM initial operating scope of action is therefore needed.

The Commission therefore proposes in this legislative package to reinforce the role of the Network Manager based on streamlined governance that gives a more prominent role to the industry (ANSPs, airspace users and airports). This will allow the enlarging of its scope to include new functions (including aspects of airspace design) and services related to network operations to be performed at the central level by the Network Manager.

5. BUILDING A MORE CONSISTENT INSTITUTIONAL FRAMEWORK

5.1. Role of the European Aviation Safety Agency (EASA) in ATM

EASA has been pivotal in EU aviation policy since 2002, with its objective both to achieve a high and uniform level of safety and to further the traditional EU goals of a level playing field, free movement, environmental protection, avoidance of regulatory duplication, promotion of ICAO rules etc. In 2009\(^\text{18}\), EASA's responsibilities expanded to cover in addition safety aspects relating to ATM and aerodromes. The 2009 extension to ATM created duplication in that as a result some tasks are covered by both SES legislation and the EASA basic regulation. This was deliberate to avoid a possible gap in the regulatory framework during the transition phase. But the legislation invites the Commission to propose changes to remove the overlap once the corresponding EASA implementing rules have been established\(^\text{19}\).

In areas such as air crew licensing or airworthiness, EASA ensures the drafting of all technical rules, but ATM was different in that a distinction was made between "safety" and "non-safety" rules, given the strong residual role played by Eurocontrol in non-safety issues. The problem is that all technical ATM rules contain both safety elements and elements related to capacity, cost and efficiency, so implementation is difficult, particularly as an increasing number of ATM rules have impacts also on the airborne side and hence airworthiness, air operations, training etc. With the SESAR project now getting close to deployment, the problem of aligning different technical rules risks getting worse as all related technologies and concepts must be facilitated or mandated by the regulatory system. We need to move to a single regulatory strategy, rule structure and consultation process under the EASA umbrella, also with a view to ensuring the proper involvement of all affected parties, such as the airspace users, airports, service providers and the military community.

The Commission proposes in this legislative package to eradicate the overlap between SES and EASA regulations and share work between the different institutions accordingly. The Commission should therefore focus on the key questions of economic regulation, whilst EASA ensures co-ordinated drafting and oversight of all technical rules, drawing on expertise from Eurocontrol, Member States, and industry stakeholders. The proposal also takes the opportunity to update the EASA regulation both to include up to date references to comitology in line with the Lisbon treaty, and to the governance of EASA in line with the Common Approach of the EP, Council and Commission on EU decentralised agencies in July 2012. The latter agreement includes also standardisation of the names of EU Agencies, so that the name of EASA shall be modified to "European Union Agency for Aviation (EAA).

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\(^{19}\) Refer to Article 65a of Regulation (EC) 216/2008 of 20 February 2008 (OJ L 79, 19.3.2008, p. 1) as amended
5.2. Focussing Eurocontrol on the management and operation of the European ATM network

Eurocontrol is a major player in the implementation of the SES. Originally established to provide a collective air traffic control system in six European states, it took on a broad set of ATM related tasks over the years and has become a major centre of ATM expertise. Following the extension of EU competence to ATM matters, Eurocontrol started a process of reorganisation to align itself with SES policy: firstly to respect the principle of separation of regulatory activities from service provision; and secondly to avoid duplication with the increasing roles of the Commission and EASA in policy-making, regulatory, certification and oversight activities. The EU became a provisional member of this organisation in 2003. The on-going process of reform of Eurocontrol facilitated its appointment as Performance Review Body (PRB) in 2010 and NM in 2011 and, starting from 2007, its participation in the SESAR Joint Undertaking as a founding member.

Furthermore, in an effort to better coordinate their activities, the EU and Eurocontrol signed an High level Agreement in 2012 which recognises the contribution that Eurocontrol can make to the establishment of an efficient European ATM system by assisting the EU in playing its role as single European regulator. In this respect Eurocontrol will continue to support the Commission and EASA in drafting of rules and regulations.

Significant steps have already been taken, and the final part of the process of the reform of Eurocontrol has begun in 2013. It remains an intergovernmental organisation and its Constitution and its decision-making bodies (such as the Provisional Council) do not yet reflect the outcome of recent reform changes. The Commission supports the on-going reform of Eurocontrol that will focus on the management and operation of the European ATM network. The particular importance of this role has already been recognised by the EU through a mandate to Eurocontrol to deliver the Network Management functions set up under SES legislation. These functions could be further enhanced – and the efficiency of the network further improved – if the NM were to be charged with additional network functions or centralised services to be contracted out to industry that ANSPs could make use of. This development should be promoted in full consistency with the SES legal framework and SESAR deployment. Moreover it cannot materialise without a shift in the governance of this organisation towards a more industry-led environment (see section 4.2).

The provisional governing bodies of Eurocontrol have started the discussion on the reform of the organisation in May 2013. The Commission intends to contribute to this discussion by coordinating the position of Member States to ensure a swift revision of the Eurocontrol Convention starting from 2014 and focusing Eurocontrol on operational tasks in which it has greatest expertise.

6. CONCLUSIONS

Achieving the Single European Sky remains a key priority in European aviation policy with the as yet unrealised potential to deliver major savings for the aviation sector and indeed the European Economy as a whole. Based on analysis contained in the present Communication and the associated impact assessment, the Commission proposes a legislative package (SES2+) to consolidate and where possible accelerate the process of reform of ATM in Europe, by further addressing the inefficiencies in the provision of air navigation services and

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20 Belgium, France, the Federal Republic of Germany, Luxembourg, the Netherlands and the United Kingdom
by continuing to drive towards the defragmentation of the European ATM system. The legislative proposals represent evolution, not revolution, and build on, and do not supplant, previous reforms. But they should significantly contribute to turn the European ATM system into a more efficient integrated operating airspace in the coming years, building upon the results already achieved since 2004.