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from: Secretary-General of the European Commission,
signed by Mr Jordi AYET PUIGARNAU, Director

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to: Mr Javier SOLANA, Secretary-General/High Representative

Subject: Commission staff Working Document accompanying document to the Proposal
for a Directive of the European Parliament and of the Council on Airport
Charges
Full Impact Assessment

Delegations will find attached Commission document SEC(2006) 1688.

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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 24.1.2007
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COMMISSION STAFF WORKING DOCUMENT

Accompanying document to the

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on airport charges

Full Impact Assessment

{COM(2006) 820 final}
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Executive summary

Different systems for pricing of airport infrastructures exist in the EU. Their practical effect, in terms of the levels of airport charges, is not always properly justified to airport users and the exchange of information thereon can be inadequate. EU air carriers on the one hand and airports on the other are often in disagreement on charging systems and the charges levels.

Action at Community level is necessary so as to ensure that at all EU airports a set of minimum rules of conduct is established that applies when airport charges are being determined. This impact assessment considers a number of options in this regard and assesses their effects.

In 2006, stakeholders have been consulted on the issue and for this impact assessment the expertise of a consultant has been used.

The following options for action have been considered : (1) no EU action, maintaining the status quo; (2) a scenario in which the air carriers and airports develop and adopt voluntary EU wide self-regulatory measures to address the problems perceived; (3) the introduction of a Community legal act establishing a general framework requiring that the way airport charges are determined and levied, reflect a number of basic common principles; and (4) the introduction of a Community legal act establishing a legal framework at EU level requiring that airport charges are determined and levied on the basis of a uniform compulsory regulatory system establishing a single method of calculation to be defined.

No Community action will lead to continued variation in the charging systems and their underlying principles in the Member States. This will over time increase the tensions between airports and the airport users. As to *option 2*, there would be certain obstacles for the creation of measures on a voluntary basis. Some Member States may be highly reluctant to substitute their economic regulatory system with such measures. The overall impact of *option 3* is a downward pressure on charge levels. It is expected that this downward pressure is less strong than in option 4 as there is more room for national differentiation. The exact impact on charge levels cannot be quantified as it is not possible to predict how national regulators would react in this respect. *Option 4* includes an EU binding target level for cost-efficient operations of airports based on a benchmark of airport cost-efficiency of European airports. The administrative costs are expected to be significant in this option but overall tariffs can be expected to decrease.

All options except option 1, are expected to increase cost transparency. Option 4 may outperform option 3 in terms of the best impact on achieving cost efficiency of airports but option 4 will have major implementation difficulties and is expected to generate high administrative costs. These would not justify a common regulatory framework and would also not be in the interest of air carriers as costs are not the only criterion important to them.

The conclusion is that option 3 (a general EU framework with common principles) offers the best potential to solve the problem.

Section 1: Procedural issues and consultation of interested parties

1.1. Organisation and timing

This impact assessment on a draft Directive on airport charges is part of a package of Commission initiatives to support the efficient operations of EU airports.

An inter-service group was established in which the Secretariat General and the DG's Competition, Ecfm, EMPL, ENTR and ENV participated. Meetings were held at the various stages prior to the preparation of this impact assessment, mainly to discuss the interim and the draft final report of the study on the Impact assessment executed by a consultant.

1.2. Consultation and expertise

Consultation

The preparation of this proposal has been preceded by a consultation in order to gather as many comments and suggestions as possible from the bodies concerned. This exercise respected the minimum standards for consultation of interested parties as defined in the Communication from the Commission of 11 December 2002 [COM(2002) 704].

A hearing was held on 7 April 2006 where all the major stakeholder associations and organisations were given the opportunity to present their respective positions. These presentations are available on the website of the air transport directorate of DG Tren¹. The following organisations were represented

ACI (Airports Council International) for the airports;
AEA (Association of European Airlines), ELFAA (European Low Fare Airlines Association), ERA (European Regional Airlines Association), IACA (International Air Carriers Association), and IATA (International Air Transport Association) for the air carriers,
CANSO (Civil Air Navigation Services Organisation) for the air navigation service providers;
EEA (European Express Carriers Association) for the express carriers,
ETF (European Transport Workers Federation) for the transport workers,
IAHA (Independent Aviation Handlers Association) for the independent handlers, and
ECA (European Cockpit Association).

The following trends emerge from the contributions to this consultation process.

The positions of the main players in the air transport industry i.e. the airports and air carriers are less antagonistic than before and most stakeholders agree on the need for EU regulation on airport charges containing basic principles to be respected, on the need for the establishment of an independent regulatory or supervisory body at national level and that a balance should be struck between charges reflecting the airports' needs and the air carriers' legitimate interest regarding the transparency of these charges.

The air carriers' organisations recall the difficult situation of air carriers when compared to airport operators. Since 2001, air carriers have had to cut operating costs by 9% and back office cost by almost a quarter. The average unit rate for air traffic control had also gone

¹ http://ec.europa.eu/transport/air_portal/index_en.htm

down by some 12,5% (2003 - 2006). At the same time, the airport costs per passenger had risen on average by 13%, and at a number of airports with well over 20%. Fourteen of the 25 most expensive airports are located in the EU. The organisations are strongly in favour of regulation at Community level which should ideally contain a number of ‘golden rules’. Their point of departure is an independent regulator at national level to provide economic oversight, this in view of the ‘monopolistic’ nature of airports. As stated in ICAO’s basic principles on airport charges, rates and charges for facilities and services related to aviation should be regulated. Effective implementation of the principle of cost-relatedness is also advocated; this should preferably be ensured via the introduction of a price cap, in particular to mitigate any negative effects of airport privatisation. Pre-financing mechanisms for airports need to be replaced with more efficient forms of financing, using normal business practice while service standards which are paramount to guarantee quality, should be set.

The low cost carriers take a different view, as they note that major airports are lowering their charges in the face of increased competition from secondary and regional airports and this development renders regulation of airport charges mostly unnecessary. The regional air carriers welcome economic regulation as long as cross subsidisation of airport charges through the use of commercial revenues will remain possible.

The airports highlight the need for new airport capacity by 2025 and the requirement to fund the capacity extensions till that year with 45 billion Euros. They also point out that air carriers do not pay the full costs of airport infrastructure and that charges only amount to some 4% of air carriers’ costs. The airports state that airport charges are sufficiently regulated at national level based on ICAO principles but they are not opposed to Community legislation on the issue. Moreover, the airports take the view that the basic wish of air carriers is to achieve cross subsidisation of airport charges with the revenues from the airports’ commercial activities to which the air carriers are not entitled. Nonetheless, the airports underline the partnership that air carriers and airports have to operate in and they underlined their preparedness to constructive engagement.

The above description shows that the various players in the industry have different views on to what extent regulation at Community level is necessary and, secondly, what specific provisions this legislation should contain. In the light of the diverging opinions the the Commission services have defined a number of options that take into account the various modalities for Community legislation.

Expertise

The impact assessment was subject to a contract with an external consultant. The consultant examined the economic and environmental impact of different policy options for the regulation of airport charges.

During the contract, there was permanent feedback from the consultant to the Commission services to adjust the draft proposal taking into account the findings.

Section 2: Problem definition

2.1. The issue

In the EU airport sector no common charging mechanism applicable across the EU is in place. This does not mean that airport charges are not regulated. Internationally, ICAO provides

recommendations on airport charging² and in the individual Member States charging systems are usually regulated and imposed by national authorities and governments. As no common EU framework on airport charging exists, each Member State applies its own charging mechanism.

The diverging charging systems in the Member States lack clear transparency in the way in which they are built up. This creates at times tensions with respect to the acceptability of price changes and charging levels towards the users of the airport, *in casu* the airlines. It may also lead to a distortion of competition between airports.

The components of airport charges also differ among Member States. Where most charges contain landing fees, parking charges and passenger service fees, the (way of) application of surcharges for the environmental consequences of the use of the airport infrastructure or for the cost of security varies significantly between airports.

Deficiencies in the airport charges systems in the EU exist. Below, an number of major features of the systems and their shortcomings are described. The current situation with respect to airport charges is described along the following lines:

- Market organisation: competition between airports and airport ownership (2.1.1);
- Regulatory frameworks and consultation (2.1.2);
- Charges and the financing of airports (2.1.3);
- Differentiation of airport charges (2.1.4);
- Conclusions (2.1.5).

2.1.1. Market organisation

The necessity of regulating airport charges is closely related to the specific market organisation of airports. This section first deals with the competition between airports and then elaborates the issue of airport ownership.

Airport competition exists on various levels. However, in general competition between airports is judged to be relatively limited³ and it is sometimes related to specific market segments. Competition between airports depends strongly on the type of airport.

The main area for competition is at the level of regional airports where large regional airports compete with each other and the nearest hub airport. Competition takes place at a population area that is also served by other airports. Examples include Hamburg and Lübeck in North Germany, Birmingham and East Midlands in Central England and Brussels and Charleroi in Belgium. Competition can exist between an established international gateway and one or two smaller secondary airports or between two similarly sized regional/secondary airports serving the same area.

² ICAO (2004) ICAO's Policies on charges for airports and air navigation services. Doc 9082/7.

³ See Cranfield University (2002) Competition between airports and the application of State Aid.

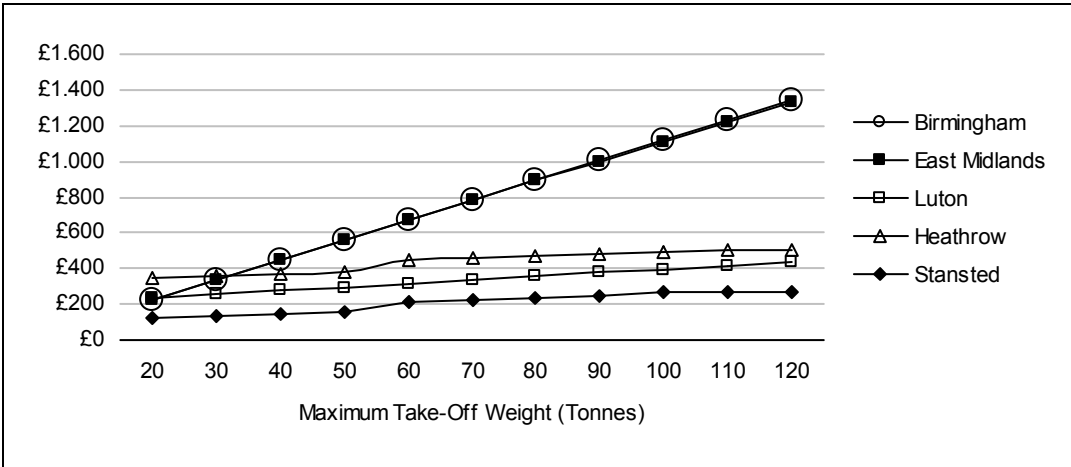
Competition also exists between major international gateways for connecting long-haul intercontinental traffic. This competition does not only take place within the EU but also between EU Member States and third countries.

Airports can make themselves more appealing to airlines by reducing the level of charges to below that offered by their regional competitors. However, not all potential users of an airport will respond positively to such an initiative. Firstly, established carriers with a significant network of operations at a major hub airport will be less likely to respond to a pricing initiative as there will be significant costs associated with transferring services to another airport, and secondly, there may be an adverse reaction from passengers who do not always feel comfortable with using a less well-recognised airport. However, if the airline has only a limited operation (e.g. three flights per day), then it may be more likely to re-locate services. This is particularly true of low cost airlines and charter carriers where the ticket price is the key driver in securing market share and not airport location. The importance of charge levels is part of a set of factors. For low cost air carriers for instance, airport charges discounts are ranked fourth in level of importance behind high demand for low cost carrier services, quick and efficient turnaround facilities and convenient slot times.

Several full service regional airlines, also serving the short-haul passenger market and also incurring a relatively high percentage of costs on paying airport charges, may be less inclined to transfer services. This is because many regional airlines depend commercially on franchise and code share agreements with major carriers and this requires a coordination of schedules at major hub airports. Similar considerations are relevant for long-haul carriers who are even less likely to react to a secondary airport’s pricing initiative because aeronautical charges account for a very small percentage of operating costs and connecting traffic from major hub airports is important.

The next figure provides an example from the UK where there is convergence in the level of aeronautical charges between various competitor airports. For example, landing and terminal navigation charges levied by Birmingham are almost identical to East Midlands. Similarly Luton airport, which is independently-owned, is also pricing its services close to BAA-owned London Heathrow and London Stansted.

Aircraft landing charges (including terminal navigation charges) by aircraft maximum take-off weight at a selection of UK airports.



Airport ownership

There is a diverse mix of airport ownership structures across the European Union (see table). Ownership by the *state* appears to be common in several countries. The airport authorities here usually have the legal status of a state enterprise which is wholly owned by the national government. *Regional* ownership is also fairly widespread sometimes in combination with state or private sector interests. In Austria, Denmark, Germany, Italy, there are examples of ownership *shared* between regional governments and the private sector while mixed state-private ownership exists e.g. in Belgium (Brussels National), France (Paris CDG), Greece (Athens), Malta and Slovenia.

Some state-owned airport authorities operate networks of airports within their territory (Cyprus, Czech Republic, Finland, Greece, Poland, Portugal, Slovakia, Spain and Sweden). These networks may contain a wide mix of large, small and remote airports.

Table 2.1 EU member state ownership structures for principal airports

	State	State / regional mixed	Regional	Regional / private mix	Private / State	Private / Regional / State	Private
Austria			✓	✓			
Belgium			✓		✓		✓
Cyprus	✓						
Czech Rep	✓						
Denmark			✓	✓			✓
Estonia	✓						
Finland	✓						
France	✓		✓		✓		
Germany		✓	✓	✓		✓	
Greece	✓				✓		
Hungary	✓						✓
Ireland	✓		✓				
Italy			✓	✓			✓
Latvia	✓						
Lithuania	✓						
Luxembourg	✓						
Malta					✓		

Poland	✓						
Portugal	✓						
Slovakia	✓						✓
Slovenia					✓		
Spain	✓						
Sweden	✓						
Netherlands		✓					
United Kingdom			✓	✓			✓

2.1.2. Regulatory frameworks and consultation

The market organisation of airports, which are subjected to competition to a limited extent only, has led to the introduction of economic regulation across the Member States in Europe. The process of economic regulation establishes the relationship between costs and charges. In some Member States, major airports are subject to a form of economic regulation which seeks to ensure that airports provide aeronautical services in a cost effective manner. These airports are generally those outside the public sector, where government is concerned at the possibility of privately operated airports operating on a costs-plus basis or of generating excess levels of profit.

Below, the most common frameworks that exist in Member States are described.

Four main forms of regulation can be distinguished:

- Ministerial approval
- Rate of return regulation
- Price cap regulation
- Conduct regulation

The simplest and least transparent form of economic regulation is where the airport operator submits its proposed changes to aeronautical charges to the relevant government department for **ministerial approval**, as required by law. These submissions are normally made once every year. It is not always clear from this method on what basis and criteria decisions are reached and whether other relevant variables (proposed capital investment, projected operating costs, allowed return on assets) are scrutinised. The ministerial approval model of economic regulation is the most traditional and most common across the EU. For example, such an approach exists in relation to Brussels, Aéroports de Paris, ANA in Portugal and AENA in Spain. German airports are unique in the sense that their proposed charges are approved by their respective regional governments (Länder) rather than the Federal

Government. In recent years more robust forms of economic regulation have been implemented as a consequence of privatisation.

With strong support from airlines, the rationale for applying more formal mechanisms is the need to address apparent weaknesses associated with self-regulation and ministerial approval. These weaknesses include poor incentives on airport operators to minimise their operating costs, improve service quality to users, constrain their rate of return (profits) at reasonable levels and provide the correct levels of investment at the right time.

Rate of return based economic regulation is where aeronautical charges are set with direct reference to the costs incurred by the airport in providing aeronautical services. This approach is fairly common in the United States and has also been adopted by the operators of Amsterdam and Frankfurt airports. Under this approach both airports are regulated on a “dual-till” basis rather than “single-till” basis. Under a single-till, which is more common, aeronautical charges are set to recover the difference between the airport’s total operating costs (including allowed return on assets) and the airport’s revenue from non-aeronautical activities. A dual-till system, on the other hand, sets aeronautical charges on the basis of aeronautical costs. Therefore, regulators require airports to separate financial accounts into aeronautical and non-aeronautical segments. Rate of return regulation grants the airport operator an allowed maximum mark-up (profit) on aeronautical costs.

Price cap regulation was originally applied by the UK government to the BAA’s three London airports and Manchester. Austria introduced price-cap regulation in relation to Vienna airport at the time of its privatisation. Ireland followed in 2001 with the application of price cap regulation to aeronautical charges levied by the operator of Dublin Airport. A form of price-cap regulation was also implemented by Hamburg Airport at about the same time. Price-cap regulation is essentially designed to incentivise the airport operator to achieve cost efficiency. There are a number of variations within this model but generally it is based on aeronautical charges, usually measured as the growth in average aeronautical revenue per passenger limited by changes in the consumer price index minus a factor X. This is more commonly known as CPI-X. Thus, assuming profit-maximising behaviour, any cost savings achieved beyond CPI-X accrue to the airport. In determining the value of X, the regulator takes into account a range of variables such as expected productivity improvements, operating costs, return on assets and projected capital investment.

In recent years there has been a move towards **conduct regulation** by encouraging direct negotiation between airports and airlines on aeronautical charges, service levels and capital investment with regulators retaining reserve powers to impose price caps if negotiations are not successful. Such an approach was fairly recently adopted in relation to Copenhagen airport. So called shadow economic regulation can potentially ensure that the threat of regulation will act as a powerful incentive on the unregulated airport to behave responsibly without having the associated administration costs of a fully-fledged price-capped regime.

Type of regulation	Countries
Ministerial approval	Belgium, Cyprus, Czech Republic, Estonia, France, Germany (except FRAPORT, Hamburg) Hungary, Italy (under revision), Latvia, Lithuania, Poland, Portugal, Slovakia, Spain, Switzerland

Rate of return regulation	Germany (FRAPORT), Greece, Netherlands,
Price gap regulation	Malta, Austria, Ireland, Sweden, United Kingdom, Germany (Hamburg)
Conduct regulation	Denmark (with price-cap as fall-back option), Slovenia

Source: ECORYS, ACI (2003, 2005)

Consultation process on charges

Consultation with users prior to either changes to the levels of charges or new planned investment programmes is considered an important feature of good airport corporate governance. Indeed airports are strongly recommended by ICAO to engage in consultative discussions with airlines with regard to charges and capital investment⁴. Furthermore, it is recommended that states establish institutional mechanisms which allow for independent arbitration of airline appeals.

The vast majority of airport authorities have established mechanisms for consulting with airlines on user charges. In several countries, consultation with users is required in law such as for example in the UK, France and Italy. The precise forms of consultation differ by Member State. In Germany and Spain, for example, consultation takes place four to five months prior to approval. In a 2003 ACI survey of approaches to airport charges in Europe, found that all airport operators surveyed had established consultation procedures with airlines in terms of charges and capital investment plans. However, what is not clear from the experience of user consultation is how satisfactory these arrangements are from the perspective of the airlines.

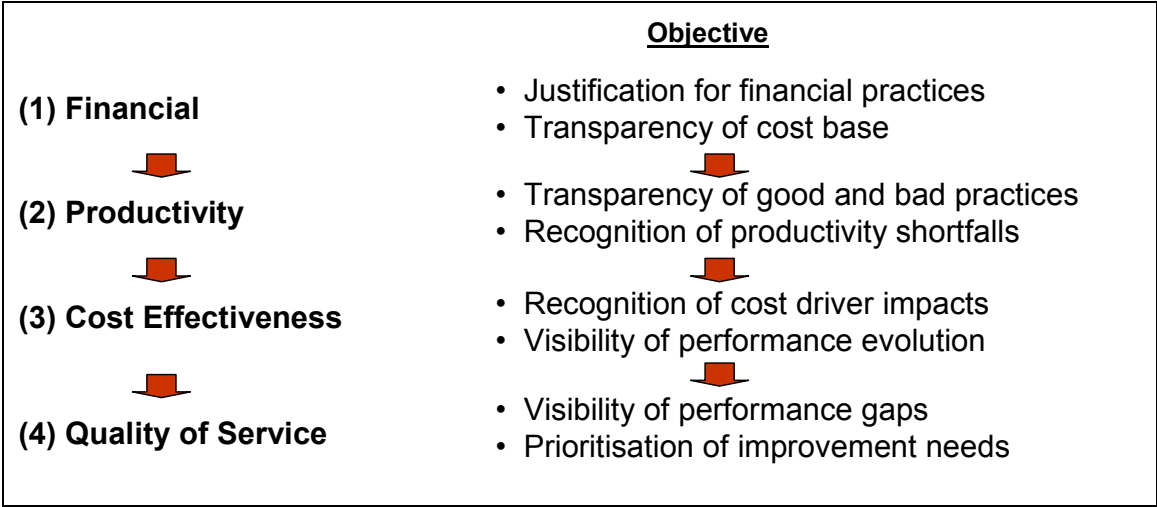
Cost efficiency and regulatory regimes

One of the risks of leaving airports unregulated is that there are no incentives to operate efficiently both in terms of running costs and through the provision and timing of capital investment. Airports can supply excess capacity and then pass on the additional costs to users who have little choice but to accept higher aeronautical charges. Economic regulation, should in theory, seek to address this problem in providing the correct incentives for airport operators to function cost-effectively.

Cost efficiency is a key performance indicator for an airport. It addresses both the cost drivers for an airport and the productivity. IATA distinguishes four aspects in cost efficiency, which are depicted in the figure below.

⁴ ICAO (2004) ICAO's Policies on charges for airports and air navigation services. Doc 9082/7, Paragraphs 31 - 33.

Areas of Cost Efficiency



Source: IATA

IATA argues that cost efficiency assessment of the airport sector has been limited by a lack of relevant or accurate data. Nevertheless, benchmark activities on cost-efficiency of airports have been undertaken in the past⁵. These benchmarks show significant differences in the cost-efficiency among airports.

2.1.3. Charges and the financing of airports

An important element with respect to airport charges is the cost recovery of airport charges. As airports are operated increasingly as stand-alone business full cost recovery is an essential aspect. Both aeronautical and non-aeronautical revenue streams contribute to cost recovery.

Airports have developed in the course of years from transport nodes which generated only income from transport activities to a full complex of activities and services where the majority of revenue comes from non-aeronautical commercial revenues. The possibility of generating non-aeronautical revenue is related to the size of the airport (see table).

Table 2.4 Airport size and revenue sources: the Spanish case (1997)

	Size (number of passengers)	Non-aeronautical revenue/total revenue (%)
Largest airports	10-25 million	40%
Large airports	1-10 million	36%
Medium airports	300.000-1 million	35%
Small airports	<300.000	31%

Source: Betancor, Rendeiro 2000

⁵ E.g. ATRS, Airport Benchmarking report 2006; TRL, Airport Performance indicators 2005.

It is generally recognized that small airports do not generate sufficient income to reach break-even. This break-even point is estimated between 0.5-1.5 million passengers per year, depending on the country and the way in which airports are organised⁶. Cost recovery of smaller airports below this size can be as low as 50%⁷.

The extent to which aeronautical revenue covers aeronautical costs (both capital and running costs) is not always easy to establish, because the vast majority of airports do not separate their accounts into aeronautical and non-aeronautical activities. Also, even those airports that do, data is not made public and is only retained internally by the relevant authority. However, those airports that have adopted dual-till pricing mechanisms do disclose separate accounts for aeronautical and non-aeronautical activities.

A recent survey from ACI (Airports Council International) indicates that for most airports aeronautical costs⁸ are not fully covered by income from aeronautical charges (see table).

Do aeronautical charges cover aeronautical costs?

	Cost-coverage aeronautical costs
Austria (VIE)	Yes
Belgium	No
Denmark (CPH)	Narrow coverage of expenses. Tendency to move towards dual till
Finland	Yes
France (ADP)	No. Extra charges subsidies aeronautical charges
Germany (FRA)	No. In 2003 86.5% cost coverage (despite dual till)
Greece (ATH)	No. Coverage approx. 60% (despite dual till)
Ireland (Dublin Airp Auth)	No, single till mechanism
Italy (Milan, Rome airports)	No
Norway (Avinor, 51 airports)	No
Poland (Warsaw)	Yes
Portugal (ANA)	No, single till
Spain (AENA)	No, cost coverage 85% in 2002

⁶ See EC (2005), Memorandum to the Commission. Community guidelines on financing of airports and start-up aid to airlines departing from regional airports (para 83).

⁷ See Cranfield University (2002) Study on Competition between Airports and the Application of State Aid Rules (see section 5.2).

⁸ It is not stated which costs are included in the aeronautical costs but it is expected that this covers both capital and running costs.

Sweden (LFV)	No, cost coverage 81%
Switzerland (Zurich)	Cost coverage 80%. Objective to establish dual till
The Netherlands (AMS)	Yes, dual till mechanism
United Kingdom	No, single till

Source: ACI 2004, 2005

At many airports within the EU, airport charges currently do not recover full aeronautical infrastructure costs. There are several reasons for this. Firstly some airport operators have structures and levels of aeronautical charges that have evolved historically from a time when cost-recovery was not a major priority for the airport authority. Secondly, some airport operators have been pricing aeronautical services below cost because their approach to charges is market-driven and to relate charges to costs might make these airports less attractive to airlines which would in effect create a major impediment to business development and traffic growth. Thirdly, several airport operators, particularly those managing major hub airports, have been subject to government economic regulation which has prevented full recovery of aeronautical costs from airport charges.

2.1.4. Differentiation of airport charges

Regulators at airports may not seek to match specific services to the cost of using them, but instead match total costs with total revenues. For example, the target of regulation for the UK regulator is the average aeronautical charge per passenger. This gives the airports a wider degree of freedom in setting its charges, allowing them to respond to market demand by, for example, establishing landing charge structures which in terms of overall charges are revenue neutral but discourage runway use at peak times by smaller aircraft (as at London Heathrow).

In general differentiation in charges is common. Although most airports use certain common denominators (viz. the weight of the aircraft), as also recommended by ICAO, the way in which charges are differentiated shows a strong variation across Europe. In the EU, the following types of differentiation occur:

- Differentiation by type of carrier and user;
- Discounts on charges;
- Incorporation of external impacts (noise, emissions) in charges.

2.1.5. Conclusions

For airport charges, no common charging framework exists across the EU, although overall guidance on charging is provided by ICAO in the form of non binding recommendations. The components of airport charges also differ in the Member States. Where most charges contain landing fees and passenger service fees, the (way of) application of surcharges for the environmental consequences of the use of the airport infrastructure varies significantly between airports.

The current market situation of airports reveals that there is limited competition between airports. Competition takes mainly place at the level of regional airports. The rise of low cost

carriers further enhanced competition at the regional airport level. For the larger airports, in view of their monopolistic characteristics, most countries have adopted economic regulation with respect to the aeronautical charges of these airports, varying from ministerial approval to price-cap regulation. These forms of regulation all have their disadvantages, like a lack of incentives for cost-efficiency in the case of rate of return regulation, and the possibility of excessive investment in the case of price cap regulation.

There are some very clear and fundamental differences in the approaches adopted by Community airports in terms of the level and structure of aeronautical charges levied for intra-Community air services. The most important of these differences centre on:

- The *recovery of costs* incurred in the provision of aeronautical facilities and services. Where airport networks are operated, the major airports in these networks may cross-subsidise the provision of aeronautical services and facilities at smaller airports in the network. This practice means that airlines using these smaller airports are receiving an (indirect) subsidy to their operating costs.
- *At some airports aeronautical costs are subsidised* from commercial revenues. This may occur through application of “single-till” economic regulation. This practice creates an indirect subsidy to airline operating costs, a benefit enjoyed by all airlines operating at the airport. In wider terms it confers a benefit on the “home” carrier which may not be available to competitor Community carriers at their own airport bases.
- The extent to which airport charges are *modulated* or structured to recover external costs. Noise penalties and charges are widely, but not universally, applied: emission charges are applied at only very few Community airports.

2.2. The underlying drivers of the issue

Airports and air carriers are in agreement on the basic need for infrastructure to be funded, at least in part, by means of airport charges to be paid for the use of airport facilities and services. However, disagreement exists on how these charges should exactly be calculated and on which components should be taken into account.

This disagreement is not helped by the absence in some Member States of comprehensive legislation on the issue. In other Member States, legislation does exist but it may be of a general nature and airport operators, either publicly or privately owned, have considerable freedom to set their charges. Only in very few cases, notably that of the UK, is legislation⁹ in place that regulates airport charges to the general satisfaction of both market players even if on details disagreement may persist.

ICAO’s policies on charges for airports and air navigation services¹⁰ are invoked by the airports as well as the air carriers where specific parts of the policies are favourable to either party or where such part or parts are vague to the extent that they can be subjected to diverging interpretation. Moreover, the ICAO policies are not binding as they are merely recommendations and as a result, they can not be enforced.

⁹ UK legislation applies to the London airports and Manchester airport only.

¹⁰ ICAO (2004) ICAO’s Policies on charges for airports and air navigation services. Doc 9082/7

The absence of Community legislation in this area translates into the following effects:

- No common respect across the EU of a basic set of principles that are applied at all EU airports when they determine (1) their charging systems, and (2) the charges on the basis of these systems;
- Discontent in most Member States among airport users that have insufficient means to influence charging systems and the charges resulting from them;
- The absence in most Member States of a regulatory body or an appeal body that has a thorough understanding of the airport business and is in a position to take decisions on airport charges that are independent as well as underpinned by expertise;
- A relationship between the main players in the air transport industry - i.e. the airports and the air carriers - that is negatively affected by the absence of a common understanding that acknowledges the need for charges to be levied at levels that are understood and supported by both players.

2.3. Who is affected, in what ways, to what extent?

Most affected by the present situation are airports and air carriers as the sellers and buyers of airport facilities and services.

European citizens are also affected as the absence of basic rules applicable to airport charges has an effect on the price of air transport whenever the cost to be paid by air carriers for the use of airport facilities and services is higher than is necessary or than can be justified by an airport operator. Such extra cost has to be paid by the air carriers and the latter will pass them on to the air travellers.

Finally, also the regulatory authorities in individual Member States are affected as their legislation, exclusively applicable at national level, does not always include basic requirements related to the proper governance of airports in the field of airport charges.

2.4. How would the issue evolve, all things being equal?

The above mentioned problems arising from the absence of common basic rules to be applied and respected across the EU are expected to subsist if EU legislation is not adopted.

As the trend towards privatisation in the EU is likely to continue at the present pace, a small number of airports may become subjected to corporate law following their privatisation. This will have a positive effect on the level of transparency of these airports' accounts. But as to the other deficiencies in Member States' legislation as considered in the proposal and this assessment, privatisation will not have a significant direct effect.

In any case, it should be noted that compared to the total number of around 130 EU airports whose traffic numbers are above 2 million passenger movements or 50.000 tonnes of cargo per year¹¹, only a very small number will be subject to privatisation. This number will most probably be less than 15% in the next five years.

¹¹ Based on traffic figures for 2005.

2.5. Does the EU have the right to act?

For the reasons described in the previous sections, there is a need for a first step to be taken towards the adoption of legislation at EU level on airport charges which will ensure the respect of common basic principles applicable to the levying of airport charges.

This need justifies EU action on the basis of Article 80(2) of the Treaty in order to ensure the levying of charges on the basis of a minimum of common EU principles and thus to allow a more efficient functioning of the internal aviation market.

Section 3: Objectives

The **general objectives** of the policy initiative are defined by other initiatives such as the Commission's strategic objectives and challenges identified in the Strategic Objectives 2005-2009¹². The general objectives are:

- To put Europe back on the road to *prosperity*, with a more competitive and dynamic Europe by:
 - Creating a business friendly environment
 - Investing in transport bottlenecks
 - By transport systems that offer a high level of mobility to people and businesses
- To reinforce Europe's commitment towards *solidarity*:
 - By closing the gap between the richest and poorest regions in Europe and addressing peripheral regions
 - By further developing sustainable development: economic growth, social welfare and environmental protection¹³.

The **specific objectives** are the immediate objectives of the policy initiative, which constitute the targets that should be reached through the Directive so as to allow the general objectives to be achieved. These specific objectives can be summarized as:

- a contribution to fair competition between EU airports by the introduction of a common charging framework;
- the promotion of fair charging systems applicable to users of airport infrastructure;
- generating sufficient revenues to maintain and complete airport infrastructure at an optimal level;
- a contribution to fair competition between EU airports by the introduction of a common charging principles;

¹² Strategic Objectives 2005-2009; Europe 2010: A partnership for European Renewal; Prosperity, Solidarity and Security - COM(2005) 12.

¹³ Sustainable development strategy - COM(2005) 658.

- the promotion of more transparent charging systems applicable to users of airport infrastructure;
- maintaining sufficient revenues to sustain and complete airport infrastructure at an optimal level.

Section 4: Policy options

As the various players in the air transport sector have different views on the extent to which regulation at Community level is necessary at all as well as on the various possibilities for economic regulation if this were proposed, the Commission services have defined a number of options that take into account the various modalities for Community legislation.

The following policy options have been analysed in depth:

(1)

No EU action, thus the status-quo remains intact;

(2)

A scenario in which the aviation industry actors develop and adopt voluntary EU wide self-regulatory measures to address the problems perceived by either party i.e. the air carriers and airports, incurred by the lack of agreement and common understanding between the parties on how the main points of contention could be best addressed;

(3)

The introduction of a Community legal act establishing a general framework requiring that the way airport charges are determined reflect a number of common principles that airport operators would have to adhere to. Thus, the basic framework for establishing the charges would be decided upon at national level but any such framework, and its application, would have to comply with the common principles as established at Community level.

The common principles would i.a. include the following: mandatory consultation, non discrimination in the application of airport charges to ensure equal treatment of air carriers, transparency of airport accounts that give an insight into the costs and revenues on an annual basis, the possibility that airport charges are differentiated according to diverging quality levels, and the establishment of a regulatory body at national level that would be responsible for supervising the uniform application of the principles.

The option includes the possibility that charges are modulated in relation to the environmental performance of aircraft used in terms of NOx emissions; noise performance should also be considered. For NOx, the following options could be envisaged: (i) making NOx differentiation mandatory while allowing room for local determination of the rate of differentiation, and (ii) making the application of differentiation mandatory under certain conditions only e.g. when EU air quality limit values are exceeded.

When assessing this option, it may be considered whether this option should apply to all EU airports or whether a threshold i.e. application only to airports of a certain minimum size, would be appropriate;

(4)

The introduction of a Community legal act establishing a legal framework at EU level requiring that airport charges are determined and levied on the basis of one regulatory system

that would apply across the EU in a uniform way, establishing a single method of calculation to be defined. This single method could be selected from the various charging mechanisms that exist in the Member States; a combination of (elements of) such charging mechanisms is also possible. This option should include the possible environmental modulation as described under option 3 above.

When assessing this option 4, it was also considered whether this option should apply to all EU airports or whether a threshold (i.e. application only to airports of a certain minimum size) would be appropriate.

None of the above options have been discarded.

Section 5: Analysis of impacts

5.1. Option 1:

No Community action will lead to persistence of the current system with variation in the charging systems and their underlying principles in the Member States. The tensions between airports and the airport users are expected to increase. This trend will be further exacerbated by the absence of a regulatory body in most Member States.

Airports with some monopoly powers will increase the charges. Consequently this will lead to increased costs for the air carriers. This will lead to inefficiencies in the airport market and will hamper the development of the air transport sector. Low-cost carriers will probably be less affected by such a development than network carriers. This could lead to a further shift in the share of traffic from network carriers to low-cost airlines with a negative impact on employment in the EU air transport sector, as network carriers are more labour intensive. Air passengers are also affected as the lack of common rules can lead to increased costs than would otherwise be the case.

The trend towards privatisation of airports in the EU is likely to continue. This will probably lead some airports to further increase the charges, and without a common framework for setting the charge this will lead to additional strain on the relationship between the airports and the users.

No administrative costs have been identified for this option, except that the increased inequality among air carriers and airports will probably lead to an increased number of complaints.

5.2. Option 2:

In this particular option, it is assumed that the key stakeholders involved will establish an EU-wide framework for cost transparency. The implementation of such an initiative could also result in greater consistency across the EU in terms of the structure of charging for aeronautical services. Some airports may be more inclined to adopt a cost-related approach to charging particularly those facilities that are large and congested. Guidelines could exist within an EU-wide stakeholder agreement relating to how cost-related charges should be established. For those airports that prefer to operate a single-till charging system then they would be bound by best practice in relation to user consultation in terms of changes to charges and capital investment programmes.

However, a serious impediment to such a development is the presence of national economic regulation where the government approves changes to aeronautical charges. Some Member States may be highly reluctant to substitute their economic regulatory system which has been established to pursue national policy goals for an EU-wide voluntary framework which may sanction cost-related charges.

It is not expected that this option will result in major changes in charge levels although charge levels at large congested airports might possibly be increased as a result of enhanced charging consistency across Europe. Since charge levels are not expected to change strongly under this option the economic impact of this option toward the current situation will be limited. Some additional administrative costs will be required to establish a common transparency.

It is not expected that this option will lead to significant administrative cost. The degree of consultation will probably increase, and thus require more effort at airlines and airports, but this seems to be limited. This approach is not expected to lead to significant environmental impacts as no large changes in transport demand are expected. The impacts on employment under this option will be absent or very limited as the economic activities will broadly be continued.

5.3. Option 3:

This option is proposed in the draft Directive. The national administrations have to respect central principles which are set on an EU legislative level. They have to include these principles in their national legislation, however, the specific shaping of these principles is left to the national level; there is room for adaptation to local circumstances. By default, there will then be differences between countries how things are arranged.

Mandatory consultation principle. Consultation is one of the ICAO guidelines in the area of airport charges that is already valid. It is recommended that national regulators adhere to these guidelines. However, these guidelines are not mandatory. Including the mandatory consultation principle in EU legislation would introduce consultation at those airports where that doesn't exist. However, in most cases there is indeed already consultation taking place between airports and airlines. It is therefore not expected that major changes will occur.

Since this option leaves room for national regulators to adopt their own process of consultation in accordance with ICAO guidelines, the impact compared to the present situation is expected to be limited.

Transparency principle. Transparency of accounts is also one of the ICAO principles. The same line of reasoning is valid as for consultation. It is currently not mandatory, but in most cases airports do give some insight in costs. However, since this element is crucial in the debate on the justification of charge levels and cost-efficiency it is expected that this principle would be further elaborated in the EU regulation in the form of defining minimum accounting standards. This would oblige airports to reveal more of their cost structures than is currently done.

Non-discrimination principle. Like transparency and consultation, non-discrimination is also an ICAO guideline. Again, this is not mandatory, hence including such principle in EU legislation would in theory prevent discrimination. However, discrimination of carriers on the grounds of nationality or some other reason seems rather limited. There are already

established structures (Community law, 1944 Chicago convention, national courts) to question such discrimination.

Differentiation according to quality levels. Differentiation of airport charges according to quality levels currently exists in many countries, on various levels. There are differences between aircraft type for the landing charge, but also concerning the passenger facility charge. Some airports give discounts on their charges to some airlines, and some airports have dedicated low cost facilities with lower charges. Transparency of the cost base of these differentiations is essential in providing the ground for discounts.

National supervisory body. The establishment of a supervisory body, amongst others, does contribute to the proper functioning of markets. Generally, effective markets have a downward impact on prices, as the existence of market power of certain parties is prevented. Again, it is expected that such effect would occur in the airport sector as well.

Finally, the analysis has shown that the regulation of prices, if set-up well, is a very good way to increase efficiency in a harmonised way. If the regulation in combination with effective and credible enforcement is organised in a sound manner, prices and efficiency can be impacted in a beneficial way.

It should be noted that the degree to which extent these impacts will occur for the airport sector in Europe will vary among member states. After all, there are some countries that already established an independent regulator. Nevertheless, there exist also countries where regulation (in whatever form) is supervised by the policy-making government.

Impact on charge levels

It is unlikely that national regulators will adopt the same one-size-fits-all target level all over the EU. Obviously a European benchmark on cost-efficiency would create additional awareness at the side of the regulator (who would be obliged to show that he has abided with the cost-efficiency principle), but a national regulator would also have its own motivations taking into account local circumstances and the current cost level of its airports under supervision. It is expected that this would result in a less stringent pressure on airport cost level which are above the EU-average.

On the other hand a national regulator could additionally impose on airports that are currently on or under the EU average a target level to become more efficient (and move to the best-of-class opposition). This would thus have an additional downward impact on charge levels, compared to option 4.

The overall impact of this option is a downward pressure on charge levels. It is expected that this downward pressure is less strong than in option 4 as there exists more room for national differentiation. The exact impact on charge levels cannot be quantified as it is not possible to predict how national regulators would react in this respect.

Economic impact

This option will inevitably lead to administrative costs. One of the aspects is the introduction of harmonised accounting systems. These would be required to abide with the principle of cost transparency and also to introduce some elements of a level playing field across Europe for example with the adoption of similar depreciation periods. Separation of accounts for

different airports in a network and separation of accounts for non-aeronautical and aeronautical revenues would still be advisable.

However as the elaboration of cost-efficiency is left to the national regulators, there exists more room for national variations. Also a regulator may decide not to request major adjustment in the airport accounting system in those cases where competition is strong enough to create sufficient pressure on the cost level of airports. In these cases there is no need for strong regulation.

The establishment of a national regulatory body will result in additional costs for those countries where at present no separate, independent regulator exists. In some countries part of the staffing may be a re-distribution, as some staff might be transferred from the current national regulator or ministry to such new regulatory body. However, additional overheads will be created by default.

Supervision of abidance with the principles in this option will lead to additional oversight by the national regulatory body in some countries. Accounts must be approved, and regular contacts between the operator and the regulatory body will be necessary.

The introduction of option 3 is expected to lead to a downward pressure on price levels at airport. The eventual impact on charges levels across Europe is impossible to quantify as it depends on the interpretation of national regulators. However, it can be expected that the impacts are less stringent than under options 4. As a result the changes in transport demand would also be less, although still positive.

Social and environmental impact

The impact on employment is influenced by two aspects: staff required carrying out the regulation and the effects on employment associated with transport demand. The impacts on such demand would tend to differ with the degree that Community legislation would go beyond the existing ICAO principles with respect to consultation, transparency and non-discrimination. A limited impact on transport demand would imply a limited employment effect.

The exact impact on demand is difficult to quantify and the workers representatives have not provided the Commission services with information that indicates that employment would be affected in a significant way, either positively or negatively.

Introducing emission charges. Option 3 includes the possibility that charges are modulated (i.e. introduced in a revenue neutral manner) in relation to the environmental performance of aircraft in terms of NO_x emissions and noise performance.

For the introduction of NO_x charges it is logical to adopt the framework proposed by ERLIG/ECAC¹⁴ for an emission-related landing charge model that is consistent across Europe. This model also forms the basis of the current Swedish and UK emission charges system¹⁵. The introduction of a common system would have the highest impact as it allows

¹⁴ ECAC recommendations 27-4 - ERLIG.

¹⁵ See ECAC, ANCAT Emission charges sub-group, Introduction of emissions related landing charges in Europe (presented by the UK), 13 December 2005.

airlines to base their behaviour (aircraft purchase or retrofit decisions) that is potentially valid for all airports in the EU.

An evaluation of the Swedish and Swiss charges indicates that the effects of emission charges are positive but limited¹⁶. Overall improvements NOx and HC emission levels at Arlanda airport did not outperform other European airports without emission charges. The emission charges do not seem to have had a significant impact on the choice of NOx-low engines. The costs of emission charges are currently apparently not high enough to make these a high priority when performing analyses into which aircraft and engines to buy¹⁷.

Establishing a threshold?

When deciding to which airports Community legislation on airport charges should apply, a balance should be struck between on the one hand ensuring application of such legislation to airports that have sufficient traffic that makes regulation of airport charges meaningful to air carriers serving those airports and on the other hand making regulatory oversight to the airports concerned as efficient and light as possible.

As described above, there are currently several different levels of competition between the different types of airport. Competition scenarios are evaluated case by case, based on the markets in question. However, research¹⁸ has shown that, generally, major international hubs are competing with similar airports in all the transport markets concerned, with the level of competition depending on factors such as congestion and the existence of alternative transport, or, in certain cases (see below), with large regional airports. Large regional airports may be competing not only with other large regional airports but also with the major Community hubs and land transport, especially if there is high-quality land access to the airport. This research has also shown that small airports do not generally compete with other airports except, in some cases, with neighbouring airports of a similar size whose markets overlap.

The Decision of the Council and of the European Parliament on Community guidelines for the development of the trans-European transport network¹⁹ defined three categories of airport:

- international connecting points (generally with an annual passenger volume of no less than 5 000 000);
- Community connecting points (generally with an annual passenger volume of between 1 000 000 and 4 999 999); and
- regional connecting points and accessibility points (generally with an annual passenger volume of between 250 000 and 999 999).

The Committee of the Regions, for its part, proposed five categories of European airports in its Outlook Opinion of 2 July 2003 on regional airport capacities²⁰:

¹⁶ See a/o LfV (2005) Evaluation of the emission charge at LfV airports; and Unique, Emission charges Zurich Airport, Review 2003.

¹⁷ ECAC (2005), EMCHARGES/1-IP/1.

¹⁸ 'Study on competition between airports and the application of State aid rules' - Cranfield University, June 2002.

¹⁹ Decision of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network (OJ L 228, 9.9.1996, Annex II Section 6).

- major hub airports (over 25 million passengers, four airports), accounting for approximately 30% of European air traffic;
- national airports (10-25 million passengers, 16 airports), accounting for approximately 35% of European air traffic;
- 15 airports of 5 to 10 million passengers accounting for approximately 14 % of European air traffic;
- 57 airports of 1 to 5 million passengers accounting for approximately 17% of European air traffic;
- 67 airports of 200 000 to 1 million passengers accounting for approximately 4% of European air traffic²¹.

According to the Committee of the Regions, regional airports generally fall into the latter two categories, but some airports in the intermediate category may also be considered regional airports.

In its Community guidelines on financing of airports and start-up aid to airlines departing from regional airports²², the Commission considered that there is a broad overlap between these two classification schemes, and for the purposes of these guidelines has defined the following four categories:

- category A, hereinafter “large Community airports”, with more than 10 million passengers a year;
- category B comprises “national airports”, with an annual passenger volume of between 5 and 10 million;
- category C comprises “large regional airports”, with an annual passenger volume of between 1 and 5 million;
- category D, hereinafter “small regional airports”, with an annual passenger volume of less than 1 million.

To follow the distinction made in the Community guidelines between ‘large regional airports’ and ‘small regional airports’, means to set the minimum level of airports to which the airport charges Directive would apply at 1 million passenger movements per year. This limit is justified as these airports are already subjected to regulatory oversight on the basis of the Directive 96/67/EC on access to the groundhandling market at Community airports.

The annex to this impact assessment provides a list of the airports which are above the threshold of 1 million passenger movements or 25000 tonnes of freight per year.

²⁰ Outlook Opinion of the Committee of the Regions of 2 July 2003 on the capacity of regional airports (CdR 393/2002 fin).

²¹ N.B. There are approximately 200 airports with fewer than 200 000 passengers per year.

²² OJ C 312 9.12.2005.

5.4. Option 4:

In this option EU legislation will be established that lays down a single method how airport charges will be calculated and regulated. This single method could be selected from the various charging mechanisms that exist in the Member States; a combination of such charging mechanisms is also possible.

The option includes an EU binding target level for cost-efficient operations of airports. This target level is established on the basis of a benchmark of airport cost-efficiency of European airports.

Cost-efficiency

An assessment is made of airports that have an operational costs level higher than the European average, taking into account the size of the airport. If the target level is set at the European average, this would imply that approximately 50% of the airport would have to adjust their cost levels. An unwanted consequence of a binding target would be if also better performing airports increase their cost levels as they appear to be justified to move to the average level as well.

For airports that apply a dual till system²³, it may be expected that the decrease of aeronautical costs, as presented in the table above, is equal to the decrease of the charge level. For airports with a single till system²⁴, the increase is probably lower, as part of the costs is off-set by commercial revenues. However, it is not known for the airports above what percentage of their aeronautical costs is covered by commercial revenues. It is therefore assumed that also for airports under a single till system, the decrease of the costs is equal to the decrease of the charges.

It must be realised that if such binding cost efficiency level would be applied, and some airports would indeed need to decrease their costs significantly, this would probably impact the service level in a large way. Another consideration is that some of these airports, or airport owners, might have chosen for e.g. a relatively high service level, for example to present the airport as the gateway to their nation, with a higher cost level as a consequence.

Economic impact

Administrative costs. Under this system a number of costs have to be made. First, airports need to establish cost accounting systems which would allow an objective comparison of costs. This would require the introduction of a uniform accounting system at each airport. This would have to fulfil a number of possible requirements, including:

- Separated accounts for different airports (if a network approach is valid in a country);
- Separated account for aeronautical and non-aeronautical revenues;

²³ System in which aeronautical charges are not subsidised, and thus lowered, by commercial revenues as both types of revenues flow into one and the same 'till'.

²⁴ System in which aeronautical charges are not subsidised by commercial revenues as both types of revenues flow into a separate or 'dual till'.

- Standard rules on cost allocation to aeronautical and non-aeronautical heads of costs (e.g. cost allocation of terminal space used for passenger movements and tax-free shops);
- Standardized accounting rules (IFRS general accounting principles; standard depreciation periods²⁵);
- Correction mechanisms to take account of different ownership patterns (e.g. land ownership of the airport; different owners of terminals).

Splitting airport accounts should not pose large problems to dual till regulated airports. Also a number of single till airports uses separate (non-published) accounts internally²⁶. However, a large number of airports still need to apply a split.

Some basic harmonisation of accounting rules is not uncommon. Examples exist for similar EU legislation with respect to railways. Also the introduction of IFRS could have been expected to take place on the longer term, although for some airports (especially smaller airports) this may still have been away for some time.

Apart from offering a good basis for comparison, standardisation of accounting methods clearly support an increased transparency.

A negative consequence of changed accounting standards would occur with respect to privatised or stock-listed companies as this can lead to changes in the valuation of the companies and hence their market value. This is also valid with respect to the disclosure of airport accounting data, which may have an impact on competition if classified information is disclosed to the public.

Based on comparable information coming from standardised accounting systems a benchmark has to be designed which provides a good measure for setting objective target levels of cost-efficiency for the aeronautical operations. This has to take account of various factors including size of airports such as economies of scale and specific local variations, e.g. cost of labour depending on the economic development of the country. In general regulatory benchmarking is expected to be difficult due to comparability problems, although it is expected to play a role in improving the regulatory process.

²⁵ For example BAA depreciates runways for up to 100 years, Amsterdam 30-40 years and AdP 10-20 years.

²⁶ ECORYS/CE (2005) Infrastructure expenditures and costs.

Average price elasticities of demand per market segment

	Price elasticity
Passenger demand long haul	- 0.77
Passenger demand short haul	- 0.71
Cargo demand	- 0.70

Source: CE 2005; price elasticities adapted by ECORYS

To calculate the impact of changes in charges levels on demand, first the impact on ticket prices has to be calculated. After all, it is the ticket price on which passengers decide whether of not to fly, not the level of airport charges. Airport charges are only one of the elements of airline costs.

It can be concluded that demand is expected to increase for option 4 for a number of airports. After all, as described earlier, the level of charges is expected to decrease for those airports, with a subsequent positive impact for demand. Note that the effects described here are viewed from an isolated perspective, hence not taking into consideration issues like capacity constraints on the airports. However, at airports with lower costs than the EU average the charges can increase, and therefore the overall impact is uncertain.

It is expected that a large part of the charge reduction is passed on to air transport users. For these users this option clearly represents advantages with fee reductions. This will lead to an increase in what economists call the consumer surplus, as existing users have to pay less and more consumers are introduced²⁷. This in turn may have indirect positive downstream effects, especially for the market segments business travellers and cargo. However, this downward effect on tariffs at some airports will be countered by increased tariffs at other airports.

Environmental impact

The changes in passenger demand as a result of changes in the charges level have an environmental effect as well. After all, more passengers imply more flights, and thus more emissions and more noise. With respect to the introduction of the introduction of emission charges conclusion are similar as for option 3.

The environmental external effects (including noise) can also be estimated in monetary terms. The average costs per aircraft/km is 1.3 € for short-haul flights and 2.2 € for long-haul flights. Obviously the relative importance of local/regional impacts is larger for short haul flight than for long haul flights. For short haul flights local/regional impacts represent approximately 65% of environmental costs, while for long haul flights this percentage drops to 15%. Within

²⁷ This effect forms part of the overall welfare effect that results from the change in the charge levels. To determine the overall welfare effect one of the corrections that should be made is to take account of the income loss for airport operators. The resulting net effect is the consumer surplus that can be attributed to the new passengers. The consumer surplus attached to this user group ranges between 0.5 and 2% of the total consumer surplus.

the local/regional impacts noise nuisance in terms of monetary costs weights heavily. Noise represents more than 70% of local/regional costs.

Social impact

The impact on demand changes as presented above can be translated into an impact on employment. In many studies on the economic impact of airports, this impact is a function of the number of passengers. In this study, key figures based on a study of York Consulting have been applied to estimate the direct impact on employment. The study distinguishes different airport types, rather than providing a single figure. The following key figures are applied:

Key figures employment per million passengers

		Employment/million passengers	
Case study airports		Range	Average
Holiday airport		350-400	375
Small regional airport		850	850
Large regional airport / secondary hub	Berlin, Birmingham, Finnish airports, Geneva, Zurich, Gatwick, Vienna	850-1100	975
Hub	ADP, Gatwick, Heathrow, Munich	1450-1600	1,525

Source: York Consulting 1998, adapted by ECORYS

Apart from the direct impact on employment (on the airport itself), there is usually an indirect impact. This is called the backward linkage into the economy, which considers economic activities that supply goods and services to companies at the airport. These backward linkages are often estimated to range from 50-100% of the direct airport employment. A conservative multiplier of 1.5 has been used in the current analysis.

	Direct	Indirect	Total
Aéroports de Paris	780	390	1170
Berlin Airport Group	330	160	490
Birmingham	310	150	460
Finnish Airports Group	240	120	360
Geneva	340	170	510
London Gatwick	280	140	420
London Heathrow	230	110	340
Munich	370	190	560

Vienna	20	10	3
Zurich	0	0	0

Employment estimation should be treated with caution. Net effects can be much lower if employment is simply substituting employment in other economic sectors. In this specific option a further negative impact on employment may arise from a more stringent budgetary regime at airports that is necessitated by the reduced revenue streams.

Section 6: Comparing the options

6.1. Matrix comparing the options

In this chapter the impacts of the three options, being:

- Option (2): Self Regulation by Aviation Industry
- Option (3): General EU framework of common principles
- Option (4): Binding EU regulation,

are compared to the “No EU action” alternative the base-line/reference option. An overview of the main conclusions per impact category is presented in the following impact matrix:

Impact	Self-regulation by sector (option 2)	Common principles (option 3)	Binding regulation (option 4)
Variants within option			
Key elements of option	common harmonized accounting and cost allocation	Common principles, including: consultation, transparency, cost-efficiency, pre-financing, regulatory body Option for modulated environmental charges	Binding regulatory system Single method of calculation Binding target level of cost-efficiency Option for modulated environmental charges
Charges and transport demand			
Change in charges	No major impact expected	Downward pressure on charge levels.	Reduction in charge levels at approx. 50% of airport. Risk of charge level increase at other airports (toward EU average level)

Impact	Self-regulation by sector (option 2)	Common principles (option 3)	Binding regulation (option 4)
Transport demand	No major impact expected	Limited increase in air transport demand (resulting from lower charges at cost-inefficient airports).	Increase of demand at airports with lower charge levels (tentatively assessed at 0-4%). Can be off-set by decrease in demand at airports with higher charge levels.
Economic			
Administrative costs	Depending on agreement but most likely need to separate aeronautical, non-aeronautical accounts. Need to separate airports accounts in consolidated airport network accounts.	Adjustments in current accounting practice required due to transparency and to allow cost-efficiency monitoring (less strong than option 4) Benchmarking as tool Cost of economic regulator	Strong need for uniform accounting rules, to make airport cost bases comparable. Regulatory benchmarking as requirement Cost of economic regulator Risk of overregulation
Airport competition	No major impact expected	Improved competitive position of currently inefficient airports if not accompanied by loss of quality	Idem as option 3, albeit but risk of lack of room to take notice of specific local circumstances (which may have impact on competitive position airport)
Airlines	No major impact expected	Positive for airlines (especially those with cots-inefficient airports as their home base). With environmental charges less favourable for airline	Idem, stronger impact as result of stronger changes in charge levels

Impact	Self-regulation sector (option 2)	Common principles (option 3)	Binding regulation (option 4)
		with old fleet	
Airport cost recovery	No major changes	Negative for airports which have to adjust charge levels and not succeed in creating sufficient cost cuts.	Idem as for option 3, impact will be stronger
Environment			
Emissions and noise	No major change	Increase in emissions/noise as transport demand increases. With environmental charges possible improved NOx-emission. Possible negative impact on HC, CO, CO2 and noise.	Increase in emissions/noise as transport demand increases (stronger increase compared to option 3). Environmental impacts idem to option 3.
Modal shift	No major impact	Shift towards air transport due to cost-efficiency improvements airport.	Idem, stronger impact than option 3.
Social			
Employment	No major impact	Positive gross employment effect through higher transport demand.	Positive gross employment effect through higher transport demand.

6.2.1. Option (2): Self-regulation by the sector

In this option the aviation sector strives to reach further cost transparency. Although is not expected to lead to direct changes in charge levels it would increase the transparency of the cost allocation and hence the justification of charge levels. This can have the same impact as a common directive (at least with respect to the issue of cost transparency).

The main disadvantage is that this would require the voluntary co-operation of a large number of actors (airports, airlines, Member States) which might make the implementation of this option a mere paper exercise with limited chances on success. Also the diverging interests of the different actors (airlines against airports) make the implementation of this option difficult.

Isolated examples do exist, for example in Copenhagen, but it should be noted that this only takes place due to reserve powers of the regulator to intervene if parties do not reach an agreement.

6.2.2. Option (3): Common principles

This option includes the incorporation of many ICAO guidelines into an EU framework legislation. Apparent changes in this option would be:

- The introduction of enhanced cost transparency in the accounting practices of airports;
- The requirement that airports have to demonstrate that they are operated in a cost efficient manner on the basis of economic performance indicators;
- The establishment of an independent supervisory body;

This option would require efforts both at the airport and the economic regulatory side. First impact of this option is increased transparency, followed by an increased pressure on airports that are demonstrably inefficient. Main difficulty is to identify economic performance indicators that sufficiently measure cost-efficiency. An improved accounting practice would give more possibilities in this respect.

The main advantage of this option compared to a more binding option is that national regulators have more freedom to adopt their policy to national conditions as long as they can demonstrate that they abide with the EU framework charging principles.

This option also includes the possibility of voluntary NOx charges. The effect of these charges should not be overestimated. Currently applied NOx charges are not high enough to have a major impact on the fleet mix. The impact is partly psychological as attention to the issue contributes to the awareness of airlines and their “green” image. Difficult trade-offs with respect to NOx charges exist, as NOx-low engines are having negative impact on noise emission and fuel burn. Apart from the economic costs associated with these trade-offs, it also leads to competition between these different environmental benefits.

6.2.3. Option (4): Binding regulation

This option is expected to have the strongest impact on cost-efficiency of airports. However the option is also fraught with difficulties as it will be almost impossible to create a single EU wide framework. It will require substantial modification of the accounting practice to make cost data fully comparable. This will involve considerable effort both for regulators and airports.

It is even doubted whether this can lead to workable “regulatory benchmarking” which is fraught with difficulties due to extensive comparability problems leading. Adjustments have to be made which are sometimes rather subjective.

It also reduces the possibility to adjust quality levels to corresponding cost levels for airports. Not all airports need to offer the same package and service level (e.g. not all airlines would appreciate low cost terminal). Cost drivers are not the only aspect relevant to the operation of an airport.

The introduction of a binding cost-efficiency target level would have to be accompanied with a binding quality service level at an EU level, which makes it a rather difficult undertaking.

With respect to the introduction of environmental charges similar conclusion can be drawn as for option 3.

6.3. Conclusions

On the basis of the above consideration the Commission services conclude that option 3 “General EU framework of common principles” offers the best potential to be implemented. All options are expected to increase cost transparency, which is preferred by users and would also aid the monitoring of State Aid principles.

The option does not have the highest impact on cost efficiency of airports as option 4 is expected to outperform option 3 in this respect. However, in comparison to the other options, option 4 is fraught with implementation difficulties and is expected to generate high administrative costs. These would not justify such a direct intervention by the Commission and would also not always be in the interest of users as cost are no the only criterion that is important to users.

The introduction of environmental charges for NO_x is expected to create a number of difficulties. Although it would be highly beneficial to enhance the awareness of airlines with respect to local air quality problems, especially when introduced on a EU wide scale, it does create a number of conflicting trade-offs with other environmental objectives (notably CO₂ emissions and noise). Only if new engines technology becomes available where these trade-offs can be avoided a mandatory EU-wide introduction could be considered. At present it seems most relevant to introduce NO_x modulation charges at those airports where local air quality is the highest environmental problem (and not for example noise).

Section 7: Monitoring and evaluation

The Commission will continuously monitor the developments in the internal aviation market and evaluate the impact of the new legislation on a regular basis.

The impact on the relationship between airports and air carriers will mainly be assessed on the basis of:

- (i) investigative activities to be undertaken by the Commission;
- (ii) the annual reports of the independent supervisory bodies to be established at national level. These reports will be an important indicator of the effects of the Directive on the process of the levying of airport charges.

ANNEX

	Airports whose annual traffic is more than 2 million passenger movements or 50.000 tonnes of freight	Airports whose annual traffic is more than 1 million passenger movements or 25.000 tons of freight	Other airports open to commercial traffic
Austria	Vienna	Salzburg	Graz, Innsbruck, Klagenfurt, Linz
Belgium	Brussels, Charleroi, Oostende, Liège-Bierset		Antwerpen
Cyprus	Larnaca	Paphos	
Czech Republic	Prague		Brno, Karlovy-Vary, Ostrava, Pardubice
Denmark	Copenhagen Kastrup	Billund	Aars, Anholt, Århus, Aalborg, Karup, Odense, Esbjerg, Bornholm, Sønderborg, Vojens, Thisted, Stauning, Skive, Roskilde, Hadsund, Herning, Kalundborg, Koster Vig, Laesoe, Lemvig, Lolland-Falster, Viborg, Tønder, Sydfyn, Sindal, Padborg, Ærø, Randers, Ringsted, Kolding, Spjald, Morso, Samsø
Estonia			Tallinn, Kärđla, Kuressaare, Pärnu, Tartu
Finland	Helsinki-Vantaa		Enontekiö, Helsinki-Malmi, Ivalo, Joensuu, Jyväskylä, Kajaani, Kemi-Tornio, Kittilä, Kruunupyy, Kuopio, Kuusamo, Lappeenranta, Maarianhamina, Mikkeli, Oulu, Pori, Rovaniemi, Savonlinna, Seinäjoki, Tampere-Pirkkala, Turku, Vaasa, Varkaus
France	Paris-CDG, Paris-Orly, Nice-Côte d'Azur, Marseille-Provence, Lyon-Saint Exupéry, Toulouse-Blagnac, Bâle-Mulhouse, Bordeaux-Mérignac	Pointe-à-Pitre-Le Raizet, Nantes-Atlantique, Montpellier-Méditerranée, Fort de France-Le Lamentin, Beauvais-Tille, Strasbourg	Agen-La-Garenne, Ajaccio-Campo dell'oro, Albi-Le-Sequestre, Angers-Marce, Angoulême-Brie-Champniers, Annécý-Meythet, Aubenas-Vals-Lanas, Aurillac, Auxerre-Branches, Avignon-Caumont, Bastia-Poretta, Beauvoir-cote-de-lumiere, Bergerac-Roumanière, Besancon-la Veze, Béziers-Vias, Biarritz-Bayonne-Anglet, Blois-le Breuil, Bourges, Brest-Guipavas, Brive-La Roche, Caen-Carpique, Cahors-Lalbenque, Calais-Dunkerque, Calvi-Ste Catherine, Cannes-Mandelieu, Cannes-Palmbeach, Carcassonne-Salvaza, Castres-Mazamet, Cayenne-Rochambeau, Chalon-Champforgeuil, Chalon-Vatry, Chambéry-Aix les Bains, Charleville-Mezières, Chateauroux-Deols, Cherbourg-Maupertus, Cholet-Le-Pontreau, Clermont-Ferrand-Aulnat, Cognac-Chateaubernard, Colmar-Houssen, Courchevel, Deauville-St Gaten, Dieppe-Saint Gaten, Dijon-Longvic, Dinnard-Pleurtuit-St Malo,

			Dole-Tavaux, Epinal-Mirecourt, Figari-Sud Corse, Gap-Tallard, Granville, Grenoble-St Geoirs, Ile d'Yeu-le-Grand Phare, La Baule-Escoublac, La Mole, La Rochelle-Laleu, Lannion-Servel, La Roche-sur-Yon-Les-Ajoncs, Lannion, Laval-Entrammes, Le Havre-Octeville, Le Mans-Arnage, Le Puy-Loudes, Le Touquet-Paris-Plage, Lille-Lesquin, Limoges-Bellegarde, Lorient Lann-Bihoue, Lyon Bron, Macon-Charnay, Metz-Nancy-Lorraine, Monbeliard-Courcelles, Montluçon-Gueret, Morlaix-Ploujean, Moulins-Montbeugny, Nancy-Essey, Nevers-Fourchambault, Nîmes-Garons, Niort-Souché, Ouessant, Pau-Pyrénées, Périgueux-Bassillac, Perpignan-Rivesaltes, Poitiers-Biard, Pontoise-Cormeilles, Port Grimaud, Quimper-Pluguffan, Reims-Champagne, Rennes-St Jacques, Roanne-Renaissance, Rochefort-St Agnant, Rodez-Marcillac, Rouen-Vallée de la Seine, St Brieux-Armor, St Denis-Gillot, St Etienne-Bouthéon, St Nazaire-Montoir, St Tropez La Mole, Saint Yan, Samur Saint Florent, Tarbes-Oussun-Lourdes, Toulon-Hyères-Le-Palyvestre, Tours-St. Symphorien, Troyes-Barbère, Valence-Chabeuil, Valenciennes-Denain, Vichy-Charmeil
Germany	Berlin-Tegel, Hamburg, Düsseldorf, Frankfurt/Main, Hahn, Hannover-Langenhagen, Leipzig-Halle, Stuttgart, München, Nürnberg, Köln-Bonn	Berlin-Schönefeld, Bremen, Dortmund, Dresden, Münster/Osnabrück, Paderborn-Lippstadt	Altenburg-Nobitz, Augsburg, Barth, Bayreuth, Berlin-Tempelhof, Bielefeld, Braunschweig, Chemnitz-Jahnsdorf, Cottbus-Drewitz, Cottbus-Neuhausen, Egelsbach, Eisenach-Kindel, Erfurt, Essen/Mühlheim, Friedrichshafen, Gera, Heringsdorf, Hof-Plauen, Jena-Schöngleina, Karlsruhe/Baden-Baden, Kassel, Kiel, Lahr, Lübeck-Blankensee, Magdeburg, Marl-Loemühle, Meschede, Mönchengladbach, Niederrhein, Neubrandenburg, Passau-Vilshofen, Porta-Westfalica, Rothenburg/Görlitz, Rostock-Laage, Saarbrücken-Ensheim, Schönhagen, Schwerin-Parchim, Siegerland, Speyer-Ludwigshafen, Stendal-Borstel, Strausberg, Welzow, Zweibrücken
Greece	Athinai, Iraklion, Thessaloniki, Rodos	Chania, Kerkira, Kos	Alexandroupolis, Araxos, Ioannina, Kalamata, Kastoria, Kavala, Kozani, Nea Anchialos, Preveza, Astypalaia, Chios, Ikaria, Karpathos, Kasos, Kastelorizo, Kefallonia, Kithira, Leros, Limnos, Mikonos, Milos, Mitilini, Naxos, Paros, Samos, Santorini, Siros, Sitia, Skiathos, Skiros, Zakynthos
Hungary	Budapest Ferihegy		Balaton-West, Debrecen, Győr-Pér, Szeged
Ireland	Dublin, Shannon, Cork		Knock, Kerry, Galway, Donegal, Sligo, Waterford

Italy	Roma-Fiumicino, Roma-Ciampino, Milano-Malpensa, Milano-Linate, Napoli, Bologna, Catania, Palermo, Bergamo, Venezia, Torino, Verona, Cagliari, Pisa	Olbia, Firenze, Bari, Lamezia, Genova	Albenga, Alghero-Fertilia, Ancona-Falconara, Aosta, Biella-Cerrione, Bolzano, Brescia, Brindisi-Papola Casale, Crotone, Cuneo-Levaldigi, Foggia-Gino Lisa, Forli, Grosseto, Lampedusa, Marina di Campo, Padova, Pantelleria, Parma, Perugia-Sant'Egidio, Pescara, Reggio Calabria, Rimini-Miramare, Siena-Ampugnano, Taranto-Grottaglie, Tortoli, Trapani-Birgi, Treviso-Sant'Angelo, Trieste-Ronchi dei Legionari, Vicenza
Latvia		Riga	Daugavpils, Liepaja, Ventspils
Lithuania			Vilnius, Kaunas, Palanga, Siauliai
Luxembourg	Luxembourg		
Malta	Luqa-Malta		
Netherlands	Amsterdam-Schiphol	Maastricht-Aken, Rotterdam	Eindhoven, Groningen-Eelde, Twente-Enschede
Poland	Warszawa-Okecie		Bydgoszcz, Gdansk, Katowice-Pyrzowice, Krakow, Łódź-Lublinek, Poznan-Lawice, Rzeszów-Jasionka, Szczytno-Szymany, Szczecin-Goleniów, Wrocław-Strachowice, Zielona-Góra-Babimost
Portugal	Lisboa, Faro	Funchal, Porto	Braga, Chaves, Coimbra, Corvo, Evora, Flores, Horta, Lages, Porto Santo, Santa Maria, Pico, Saõ Jorge, Cascais/Tires, Graciosa, Vila Real, Covilhã, Viseu, Bragança, Ponta Delgada, Portimao, Sines, Vilar de Luz (Maia)
Slovakia			Bratislava, Kosice, Nitra, Piestany, Poprad-Tatry, Prievidza, Sliac, Zilina
Slovenia		Ljubljana	Ajdovscina, Bovec, Celje, Lesce, Maribor, Murska Sobota, NovoMesto, Portoroz, Postojna, Ptuj, Slovenjgrodec, Valenje
Spain	Alicante, Barcelona, Bilbao, Fuerteventura, Gran Canaria, Ibiza, Lanzarote, Madrid, Malaga, Menorca, Palma de Mallorca, Sevilla, Tenerife Norte, Tenerife Sur, Valencia	Jerez, Reus, Santiago, Vitoria	Albacete, Almeria, Asturias, Badajoz, Cordoba, El Hierro, Gomera, Granada, La Coruna, La Palma, Leon, Madrid-C.Vientos, Melilla, Murcia, Pamplona, Salamanca, San Sebastian, Santander, Valladolid, Vigo, Zaragoza
Sweden	Göteborg-Landvetter, Stockholm-Arlanda	Malmö-Sturup, Stockholm/Bromma, Stockholm/Skavsta	Ängelholm, Arvika, Arvidsjaur, Borlänge, Eskilstuna, Falköping, Gällivare, Gällivare/Vassare, Ljungby/Feringe, Ljungbyhed, Ludvika, Gävle-Sandviken, Gothenburg-Säve, Hagfors, Halmstad, Hemavan, Helsingborg/Hammen, Hulfsfred, Jokkmokk, Jönköping, Kalmar, Karlskoga, Karlstad, Kiruna, Kiruna/Loussajärvi, Kramfors, Kristianstad, Lidköping, Linköping/Malmen, Linköping/SAAB,

			Luleå/Kallax, Lycksele, Mora/Siljan, Norrköping/Kungsängen, Oskarshamn, Pajala, Ronneby, Satenäs, Skellefteå, Skövde, Stockholm/Västerås, Storuman, Stromstad/Nasinge, Sundsvall/Härnösand, Sveg, Söderhamn, Torsby/Fryklanda, Trollhättan-Vänersborg, Umeå, Uppsala, Uppsala/Viktorias, Vilhelmina, Visby, Växjö-Kronoberg, Örebro, Örnsköldsvick, Östersund/Frösön
United Kingdom	Aberdeen, Belfast-International, Belfast-City, Birmingham, Bristol, Edinburgh, East-Midlands, Glasgow, Liverpool, London-Heathrow, London-Gatwick, London-Stansted, Luton, Manchester, Newcastle, Leeds-Bradford, Nottingham East Midlands, Prestwich.	Cardiff Wales, Kent International, London City, Southampton	Teesside, Inverness, Sumburgh, Humberside, Bournemouth, Norwich, Exeter, St Mary's (Scilly), Penzance, Plymouth, Scatsta, Stornway, Kirkwall, Blackpool, City of Derry, Sheffield, Benbecula, Tresco (Scilly), Wick, Cambridge, Islay, Isle of Man, Dundee, Campbeltown, Barra, Biggin Hill, Battersea, Tisee, Lerwick, Southend, Lydd, Hawarden, Coventry, Gloucester, Shoreham, Unst, Carlisle, Barrow, Newquay, Fermanagh