

Study into Air Navigation Services to be opened to Competition in Norway: Part 2

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Executive summary

Introduction

The Government of Norway has decided that Air Navigation Services (ANS) provision at state-owned airports should be opened to competition. The objective is to improve ANS cost effectiveness without compromising current safety, security, national defence standards and service delivery quality.

A two-part study was launched to investigate the options as to how competition should be introduced. The first part¹ identified the ANS to be opened to competition along with their best suited location, the phasing options and the implementation timeline. This document contains the second part of the study. It investigates the conditions precedent to facilitate competition and concludes on the necessary actions required to enable competition to be successfully implemented.

We believe that introducing competition for ANS at an airport will undoubtedly deliver cost savings for that airport and that this will be maximised where the risks or uncertainties to potential bidders is removed. Addressing the conditions contained in this report will reduce these uncertainties and maximise the potential for cost savings.

The conditions fall into five categories, each of which is analysed separately in this report.

Financing ANS

As the national ANS provider in Norway Flysikring carries several national obligations, the cost of these obligations is recovered in different ways. We recognise that, for Flysikring to compete fairly, Flysikring should not be disadvantaged by obligations that competing ANS providers would not have. For many of the obligations presented by Flysikring, we believe that costs can be reasonably allocated to a non-airport customer base (for example en-route (ENR) airspace users) meaning that they should not form part of the costs charged to an airport (for example Eurocontrol dues and Air Traffic Flow and Capacity Management (ATFCM) costs). However, in other areas, the costs need to be carefully justified and mechanisms put in place to recover them from either the airport itself or the ANS provider at the airport (for example Surveillance data). Training of ATCOs also needs to be resolved.

With the probable exception of Package A2.1, the tender for TWR services at Oslo Gardermoen Airport, we believe most packages will need to be subsidised. Consequently, we recommend continuation of the current model of the ANS provider being contracted and paid for by the airport operator, which would make good any shortfall of user charges with subsidies from commercial income. Any imposition of traffic risk sharing on the ANS provider would need to be done through contractual clauses.

Many of the packages involve the provision of APP services by the airport ANS provider. The current practice in Norway is to recover a proportion (50%) of these costs from the en-route traffic base, and we recommend that this should continue (subject to any review of the proportional split). The airport operator should claim the monies due from en-route users via Flysikring (as the en-route provider) and the CRCO (Central Route Charges Office). Principles will need to be put in place to handle differences between the 'determined' costs used originally to set the ENR unit rate for the Reference Period and

¹ Study into Air Navigation Services to be opened to Competition in Norway: Part 1, Helios, Dec 2015 <https://www.regjeringen.no/no/dokumenter/study-into-air-navigation-services-to-be-opened-to-competition-in-norway-part-1/id2465804/>

the actual annual costs of the new APP provider. Again, traffic risk sharing clauses may need to be part of the contract between the airport operator and the airport ANS provider.

A further complication arises at packages involving any of the four Performance Scheme airports, in view of the uniform TNC (Terminal Navigation Charge) that applies at them. With the provider of terminal services potentially changing during a Reference Period, the need for adjustments in the distribution of revenues between Norwegian stakeholders to compensate for different costs will need to be assessed. Traffic risk sharing and future rate determination will also need to be carefully considered. We advise that the MoTC or CAA opens a discussion with the PRB (Performance Review Body) to ensure regulatory compliance and also consider the possible future exemption of airports from the Performance Scheme.

Institutional reform

Currently the ANS provider ('Flysikring') in Norway is a wholly-owned subsidiary of the airport operator ('Avinor AS'). This situation could well discourage at least some potential bidders from competing for a contract for airport ANS, for fear that the 'mother' company would favour its 'daughter' in any tender process. Hence, we believe there is a need to separate them into two independent companies. Indeed several European countries, including Sweden and Portugal, have undergone a similar separation process – Avinor is one of very few companies in Europe that still operates airports and provides ANS.

Since the operational functions of Avinor Airports and Flysikring are already clearly defined, this proposed split is in practice already well advanced. However, shared central services that serve both Avinor and Flysikring do exist. Hence, the arrangements for these services will need to be revisited.

This separation requires a decision on the ministries to which both companies will report. The options are for both to continue to report to the Ministry of Transport and Communications ('MoTC'), or for one to move to a different ministry. However in practice, Avinor Airports and Flysikring will both have regulated and non-regulated aspects to their business after separation so we recommend, at least for the time being, keeping them in the MoTC to make the transition easier.

The separation process is likely to require at least a year to complete once approved by the Norwegian Parliament. It will involve several phases, starting with stakeholders seeking agreement on the basic structure of the separation. The MoTC will be required to lead the separation process, but the bulk of the detailed planning will fall on the two operating companies.

In addition to the separation of Avinor AS and Flysikring, internal organisational reform of Flysikring is needed to ensure that it does not subsidise its activities in competitive markets (eg airport ANS) from revenues generated in its monopoly markets (eg ENR ANS). We consider two structural options for separating the regulated and unregulated parts:

- Option 1 is to maintain Flysikring as a single corporate entity. The variants of this option would be (a) to have a single company with two divisions or (b) to have a single holding group with two subsidiary companies. To some degree Option 1(a) is already in place as ENR and TWR/APP services are in separate business areas within Flysikring with principles for allocating shared costs.
- Option 2 is to fully separate the regulated provider from the unregulated provider into two corporate entities.

While the ultimate decision in this area rests with the Board of Flysikring and would need to be agreed with the government and the Economic Regulator, we recommend moving to Option 1(b): the

establishment of two subsidiary companies under a single holding company. If this is seen not to be working effectively, then Option 2 is still available for adoption at a later time.

The Economic Regulator (CAA) will need to increase its resources as well as its knowledge, particularly in the area of economic regulation. With these safeguards in place, Flysikring's unregulated subsidiary company should also be allowed to compete in both domestic and international markets.

Asset and infrastructure ownership

Ensuring transparent and correct structures for asset ownership and access is an important feature for the opening of ANS to competition, as smoother transitions from one provider to another can be facilitated. It is therefore important that before launching a tender, a full asset inventory is prepared for the airport. Any outstanding airport-ANS specific assets (both fixed and intangible assets) that are not owned by the airport, in particular the local operations manual, should be transferred to the airport with payment.

In general, the airport ANS provider will require access to the local infrastructure, equipment and manuals as well as some centralised systems such as the surveillance and flight data systems. Use of local flight data processing and surveillance data processing systems will be required; either leased from the airport/Flysikring or separately provided and integrated into the national network.

For centralised assets, such as the NATCON flight data processing system, access agreements and pricing options will need to be determined and published as part of the tender. For bidders who opt to provide their own systems, they will need to arrange access to data (flight data, surveillance) through separate commercial arrangements. The MoTC or CAA may need to impose on Flysikring an obligation to provide appropriate access and to arbitrate a reasonable price – ideally paid by the airport operator. An alternative would be for the airport operator to negotiate the access price with Flysikring on a commercial basis. For some assets (eg surveillance infrastructure such as wide area multilateration) it might be possible to justify the allocation of costs to the ENR cost base and thereby oblige Flysikring to provide free access to airports.

During the course of the ANS contract, new or replacement assets might need to be acquired and it is important to clarify the responsibilities between the parties. These responsibilities may involve the specification, purchase, implementation and maintenance of the assets. Similarly, the need for asset improvement should also be defined in the airport-ANS provider contract. There should also be legal provision to protect the interests of all parties so that the asset owner will be compensated for any excessive wear and tear. To further reinforce this protection, insurance policies should be in place in the event of failure or mis-use of assets.

Employment and people

As ANS provision depends on skilled and experienced staff, employment costs can be significant portion of the cost base. This is certainly the situation in Norway where high salary costs are accompanied by a heavy pension burden.

According to the Norwegian Working Environment Act, a new ANS provider may indicate within the three weeks that it does not wish to be bound by the existing collective agreement (which is currently renegotiated every two years) but that any union may require the development of a new collective agreement. The incoming provider would be obliged to continue the same terms and conditions of employment to transferring employees, including access to a pension scheme, but they may seek to

negotiate any changes to terms with potential employees if it wishes to improve efficiency, compensate for a reduction in pension benefits and attract controllers to continue in position. For new employees, the terms and conditions would be negotiated afresh. Consequently, different terms and conditions may apply to employees performing the same work.

The Avinor Group has a Defined Benefit pension scheme, funded through payments to Statens Pensjonskasse (SPK), the Norwegian Public Service Pension Fund. Defined Benefit schemes are very expensive and in many countries are being phased out and replaced by Defined Contribution schemes. A new ANS provider would be required to establish alternative pension arrangements for its Norwegian employees. We would expect the provider to establish a Norwegian company with a new, lower cost (almost certainly Defined Contribution) pension scheme before it takes over activities from the state entity and offer this to employees so as to avoid having to create a new scheme with the same benefits as the employees' previous scheme.

The liability for the pension entitlement of anyone leaving the employment of Flysikring is carried by the State: Flysikring has no further liability. It is not clear though if this also applies to staff transferring from Flysikring to a new provider, but we recommend that this should be the case in order to reduce the on-going financial burden on Flysikring.

Regardless of whether this particular liability for staff joining new providers is lost, Flysikring still would remain at a competitive disadvantage against new ANS providers unless it were able to negotiate with its trade unions to move to a lower cost Defined Contribution pension scheme. In fact even if a Defined Contribution scheme were successfully negotiated Flysikring would still be at a cost disadvantage because under current practice it would retain the liability to provide the Defined Benefits entitlements of existing staff accrued up to the date of change in schemes. Given the significant cost associated with the pension scheme the likelihood of Flysikring winning airport tenders would remain low and consequently the state would face the liability, either directly when staff moved to a new provider or indirectly as the sole owner of Flysikring and Avinor Airports. In our opinion, it would therefore be reasonable for the State to consider assuming the liability, at least for the services open to competition, should Flysikring be able to negotiate with the unions a change to a Defined Contribution pension scheme. Reaching agreement to move from a Defined Benefits scheme would in any event be a difficult undertaking for Flysikring.

If it is not possible to change to a Defined Contribution scheme, Flysikring would find it difficult to compete in the ANS market, and in line with practices elsewhere in Europe measures to reduce their pension costs might be considered by the MoTC.

As the current obligation for ATCO and ATSEP training (both for civil and military needs) lies with Flysikring, it is important to decide how the training should be organised once the ANS market is opened to competition. It is essential for Norway to ensure that it has adequate trained staff, a need reinforced by the requirements for the ability to speak Norwegian. The time required to train ATCOs is sufficiently long that realistically it may not be appropriate to rely on foreign airport ANS providers to share part of this national obligation: a new provider will have a relatively small number of controllers and anticipate the need for very few additional controllers. Even if it trained a small number, it would not be able to guarantee a career path. Economies of scale suggest that training should remain a national obligation, but necessarily the arrangements to meet this obligation will need to change. If Flysikring were to continue to carry the training obligation, the associated costs might be reduced by some form of 'transfer fee' for staff if recruited by an alternative provider, or some degree of funding by the MoTC would be required to share the risk. An alternative approach would be for the CAA to take up the obligation and assume the role of a 'neutral provider'. The CAA would be the responsible party for the obligation, but execution of different elements might be sub-contracted to other parties, such as Flysikring or universities. This means the ATCOs trained by the CAA could be recruited by any ANS

provider as required. By increasing the pool of available Norwegian-speaking ATCOs, service cost reductions might be achieved by lowering the salaries of ATCOs.

Contingency powers need to be in place to maintain service provision if existing staff choose not to transfer to the new provider when it commences service, or if a new provider subsequently withdraws abruptly from the market. Flysikring is the obvious company with the necessary competence to provide staff, supervise the work of the controllers and if necessary, assume legal responsibility. The CAA (or possibly the MoTC) needs to ensure that it has the powers to require Flysikring to provide ATCOs under contract to a new provider should insufficient number of staff opt not to transfer to the new provider, or should the provider withdraw. Flysikring should be adequately compensated for this contract, but the CAA may need to ensure that no party is 'gaming' the situation.

Tender Process

If a decision is taken to institutionally separate Flysikring from Avinor Airports, the process is likely to take at least a year. While this is happening, either the opening of the market is put on hold, or tenders are organised by a more independent body. The MoTC is likely to be regarded by prospective bidders as a sufficiently independent organisation to lead the tender process but this would be a significant undertaking requiring both man-power and experience. The MoTC may well need support from a 'Project Manager' such as the CAA or an independent firm. The role of the MoTC, supported by the Project Manager, would be to initiate each tender; bring together the contributions of all relevant parties and oversee the evaluation of bids and the finalisation of the contract. It would also need to observe compliance with transition arrangements by all parties. Avinor Airports would need to agree with the MoTC the locations and services to be tendered, contract duration as well as to provide information on the level of service and quality standard required to the bidders. Flysikring itself should offer guidance on the appropriate operational boundaries for each tender. The CAA's role would be to focus on the specification of its regulatory requirements, in terms of both safety and economic regulation. It should also advise on compliance with the Performance Scheme and the financial elements of the future contract.

Once the separation process is completed, the role of the MoTC would be transferred to the Avinor Airports. The phases of each tender will involve preparation, attraction of bidders, pre-qualification, bidding, evaluation, transition, take-over and review. Considerable effort and thoughts should be invested in each of these phases to enable a successful competition. It is important that throughout the tender process the staff and trade unions are kept well informed and that the details of transition arrangements are provided.

The timeline of an individual tender is likely to take between one and a half years and two years depending on the complexity of the tender package – it is likely to reduce as greater familiarity is gained with the tender process. For service contract duration, it is recommended that as a starting point the contract period should be for five years with two optional extensions each of a year so that the incoming provider can recover its bidding costs. The potential order for the tenders we suggest is:

- B3.8: TWR and APP ATC at Kristiansand
- B3.4: TWR & APP ATC at Tromsø, Alta, Harstad Narvik, and Lakselv
- D1.1: Transition from AFIS to TWR ATC at Hammerfest and Brønnøysund
- B3.1: TWR and APP ATC at Bergen and Stord

- B3.2: TWR and APP ATC at Stavanger and Haugesund²

Conclusions and Recommendations

Financing aspect: Since the proposed introduction of competition will change the position of Flysikring from being the national ANS provider in Norway, the cost arrangement for all national obligations will need to be revisited. For the majority of the obligations presented by Flysikring, we believe that costs can be reasonably allocated to a non-airport customer base. In other areas, the costs need to be carefully justified and mechanisms in place to recover them from either the airport itself or the ANS provider at the airport.

The recovery of costs for the APP service is complicated, but we recommend continuing with a fixed percentage allocation of APP costs to ENR cost base for all airports (currently 50%). Close oversight from the economic regulator (the CAA) will be required to ensure consistency with EU regulations (eg on charging).

Institutional reform: There is a need to further separate Flysikring from Avinor Airports to eliminate doubts on the fairness of the tender process. Although their activities within the Avinor Group are already separately defined, many central functions however are shared and new arrangements for these services will be required. The separation is likely to take more than a year to accomplish, and in the meantime, more detailed oversight by the Economic Regulator will be necessary to allow the first competitive tenders to be launched.

In addition, a further degree of separation between the competed and non-competed activities within Flysikring should be considered to prevent anti-competitive cross-subsidy from the latter to the former. This can first be achieved by establishing subsidiary companies under a single holding company.

The economic regulatory function of the CAA will need to be strengthened.

Asset issues: In the main, most assets are already with the most appropriate party (viz Avinor Airports), so that the issues here are relatively minor. We recommend that the Intellectual Property rights to the local operations manuals also be transferred to Avinor Airports although responsibility for maintaining and updating them would remain with the ANS provider. Arrangements also need to be made to allow access or integration with ATM/CNS systems. Use of an access payment appears to be the most sensible approach.

People issues: In Norway salaries are high by international standards and staff in state enterprises such as Flysikring staff enjoy a Defined Benefit pension. It may be possible for a new ANS provider to vary the terms of employment, but such variation risks staff not transferring to the new provider.

New ANS providers will need to offer new pension arrangements to staff, and these are likely to be in a Defined Contribution scheme. Former Flysikring employees will have protection for the entitlements they have built up. These transferring employees should be deemed to be leavers from the scheme and the liability they have built up would then be the responsibility of the state, although it is currently unclear if transferring staff meet this classification.

To reduce its competitive disadvantage against new providers, Flysikring may well seek to move from the current Defined Benefit pension scheme to a Defined Contribution scheme. Should it succeed in its

² Package B3.2 has been updated in our final recommendation reflecting comments received during Part 2. The four TIA airports have now been removed.

negotiations with the unions, we recommend that the MoTC takes on the burden of the liability for the Defined Benefit entitlements accrued up to the time of the change in schemes.

Decisions on responsibility for and funding of ATCO and ATSEP training will also need to be decided. If an incoming provider cannot provide adequate ATCOs, or if a provider should fail financially and have to withdraw from the market, the CAA will need to oblige Flysikring to provide/employ ATCOs.

Tender Process: Consideration of the many steps necessary to hold a competitive tender suggests that each tender might easily take at least one and a half years from launch to hand-over to a new provider. In view of the time that it will take to separate Flysikring from Avinor Airports, we recommend that the opening of the market starts with a tender process led by the MoTC rather than Avinor Airports.

Conclusion: While there are many tasks that need to be accomplished to open the Norwegian airport ANS market to competition, none represents an insurmountable barrier to this happening.

Contents

1	INTRODUCTION	12
1.1	AIM OF THIS STUDY	12
1.2	SUMMARY OF PART 1	12
2	FINANCING ANS	14
2.1	FINANCING NATIONAL OBLIGATIONS.....	14
2.1.1	<i>National obligations</i>	14
2.1.2	<i>Financing options</i>	15
2.2	COST ALLOCATION.....	17
2.2.1	<i>Cost allocation in the context of competition</i>	18
2.3	PAYMENT ARRANGEMENTS AND RISK SHARING.....	18
2.3.1	<i>Recovery of costs from en-route users</i>	20
2.4	COMPETITION AT PERFORMANCE SCHEME AIRPORTS	21
2.4.1	<i>Economic regulation of Terminal ANS</i>	21
2.4.2	<i>Performance Scheme airports in Norway</i>	22
2.5	RECOMMENDATIONS ON ANS FINANCIAL ISSUES.....	23
3	INSTITUTIONAL REFORM.....	25
3.1	SEPARATION OF AVINOR AIRPORTS AND FLYSIKRING	25
3.1.1	<i>Current situation</i>	25
3.1.2	<i>Proposed structure</i>	25
3.1.3	<i>Reporting Ministries</i>	26
3.1.4	<i>Separation process</i>	27
3.1.5	<i>Recommendations on separation of Avinor Airports and Flysikring</i>	28
3.2	STRUCTURE AND FREEDOMS OF AVINOR FLYSIKRING.....	28
3.2.1	<i>Organisational reform of Avinor Flysikring</i>	28
3.2.2	<i>Case study: NATS</i>	29
3.2.3	<i>Option 1 for Flysikring: Separation into regulated and unregulated entities within a single company</i>	30
3.2.4	<i>Option 2 for Flysikring: Separation into two companies</i>	31
3.2.5	<i>Allocation of services</i>	32
3.2.6	<i>Recommendations on institutional change of Flysikring</i>	33
3.3	ECONOMIC REGULATOR	34
4	ASSET AND INFRASTRUCTURE OWNERSHIP	35
4.1	GENERAL OWNERSHIP AND CONTROL PRINCIPLES.....	35
4.2	ASSET REQUIREMENTS.....	35
4.3	ACCESS AND PRICING FOR CENTRALISED ASSETS	36
4.4	NEW ASSETS AND IMPROVEMENTS	37
4.5	MANAGING ASSET LIFECYCLES.....	37
4.6	TRANSITION RESPONSIBILITIES.....	38
4.7	RECOMMENDATIONS FOR ASSET OWNERSHIP AND PRICING	38
5	EMPLOYMENT AND PEOPLE.....	40
5.1	INTRODUCTION	40
5.2	LEGAL REQUIREMENTS AND CONSTRAINTS	40
5.2.1	<i>Conditions on Transfer of Undertakings</i>	40
5.2.2	<i>Pension obligations</i>	41

5.2.3	<i>Non-transferring staff</i>	42
5.2.4	<i>Trade Unions</i>	42
5.3	ENSURING ADEQUATE SUPPLY OF ATC PROFESSIONALS	43
5.3.1	<i>Staff training</i>	43
5.3.2	<i>Contingency</i>	44
6	TENDER PROCESS	46
6.1	TENDER ORGANISATION	46
6.1.1	<i>Tenders prior to Separation of Flysikring from Avinor Airports</i>	46
6.1.2	<i>Subsequent Tenders</i>	47
6.2	TENDER PHASES	47
6.2.1	<i>Preparation</i>	47
6.2.2	<i>Notification and Attraction of Bidders</i>	48
6.2.3	<i>Pre-qualification</i>	48
6.2.4	<i>Bidding</i>	48
6.2.5	<i>Evaluation</i>	48
6.2.6	<i>Closing of Transaction</i>	48
6.2.7	<i>Transition</i>	48
6.2.8	<i>Take-over of Service Provision</i>	49
6.2.9	<i>Review of Process</i>	49
6.3	TENDER DOCUMENTATION AND INFORMATION PROVISION	49
6.4	ROLES AND RESPONSIBILITIES.....	50
6.5	LIAISON WITH STAFF AND TRADE UNIONS.....	51
6.6	TRANSITION ARRANGEMENTS	51
6.7	TIME LINES.....	52
6.7.1	<i>Contract Period</i>	52
6.7.2	<i>Individual Tenders</i>	52
6.7.3	<i>Overall Opening Process</i>	53
6.8	POTENTIAL ORDER OF TENDERS	53
6.9	IMPLEMENTATION PLAN	55
7	CONCLUSIONS AND RECOMMENDATIONS.....	57
7.1	FINANCIAL ASPECTS	57
7.2	INSTITUTIONAL REFORM.....	58
7.3	ASSET ISSUES	58
7.4	PEOPLE ISSUES	59
7.5	TENDER PROCESS.....	59
7.6	CONCLUSIONS	60
A	MODELS FOR COST ALLOCATION AND RECOVERY OF APPROACH SERVICES.....	61
A.1	COST ALLOCATION	61
A.2	COST RECOVERY	61
A.2.1	<i>Risk Sharing</i>	63
A.2.2	<i>Setting and recovering the cost base</i>	64

List of figures

Figure 1: Financing options for national obligations	15
Figure 2: Current TWR/APP cost allocation principle	18
Figure 3: Recommended recovery of approach costs	21
Figure 4: Possible timeline for Tenders	53
Figure 5: Recovery of airport cost base	62
Figure 6: Options for recovery of en-route cost base	62

List of tables

Table 1: Financing national obligations	17
Table 2: Possible contractual arrangements	19
Table 3: Advantages and Disadvantages of Option 1	31
Table 4: Advantages and Disadvantages of Option 2	32
Table 5: Allocation of services between Regulated and Unregulated	33
Table 6: Access payment options	36
Table 7: Tender roles and responsibility	51
Table 8: Typical anticipated tender time-scale	52
Table 9: Implementation plan.....	56
Table 10: Approach cost allocation options	61
Table 11: Approach cost recovery options	63

1 Introduction

As part of a broader political aim to improve the efficiency of the transport sector, the Government of Norway has decided that ANS (Air Navigation Services) provision at state-owned airports should be opened to competition. The objective is to achieve improved cost effectiveness of ANS, whilst at least maintaining current safety, security, national defence standards and service delivery quality.

1.1 Aim of this study

A two part study has been launched to investigate the options as to how competition can be introduced. Part 1 of the study³ identified the services to be competed and where. Phasing options and an implementation timeline were also presented. Part 1 also provides the background to the study as well as the current situation.

This document contains the second part of the study. It investigates the conditions precedent to facilitate competition. Part I highlighted several important considerations required to successfully introduce competition. This report builds on these considerations to conclude on the necessary actions required from the responsible stakeholder groups to enable a competitive market to be implemented.

1.2 Summary of Part 1

Three scenarios were selected in Part I for the introduction of competition to ANS in Norway:

- A2, Aerodrome Control (TWR) at Avinor airports where Approach Control (APP) is not co-located
- B3, TWR/APP at co-located airports
- D1, TWR Air Traffic Control (ATC) at the busiest Aerodrome Flight Information Services (AFIS) airports

These scenarios were then grouped into the following tender packages:

- A2.1: Oslo
- B3.1: Bergen and Stord
- B3.2: Stavanger with four TIA airports⁴, as well as Haugesund, and possibly Kristiansand
- B3.3: Trondheim with Ålesund, Kristiansund, Ørsta Volda and Molde
- B3.4: Tromsø, Alta, Harstad Narvik, and Lakselv
- B3.5: Kirkenes
- B3.6: Bodø and perhaps some dependent airports
- B3.7: Andøya, Bardufoss, and Ørland
- B3.8: Kristiansand

³ P2108D001 Study into Air Navigation Services to be opened to Competition in Norway: Part 1, Helios, Dec 2015 <https://www.regjeringen.no/no/dokumenter/study-into-air-navigation-services-to-be-opened-to-competition-in-norway-part-1/id2465804/>

⁴ Package B3.2 has been updated in our final recommendation reflecting comments received during Part 2. The four TIA airports have now been removed (this is discussed further in section 6).

- D1.1: Hammerfest and Brønnøysund

These tender packages provide the basis on which the conditions precedent to facilitate the competition have been analysed in this report. The analysed conditions are categorised into five areas, each of which forms a separate chapter in this document. They are:

- Financing ANS;
- Institutional structure;
- Asset and infrastructure ownership;
- Employment and people; and finally,
- Tender process.

2 Financing ANS

In this section we discuss a number of financial issues associated with the opening of airport ANS to competition. We begin by considering how the different national obligations currently borne by Flysikring as the sole ANS provider should be financed in a more competitive environment. We then discuss a number of cost allocation issues before considering how new ANS providers should be recompensed for their services. This discussion covers recovery through en-route (ENR) charges and from Terminal Navigation Charges (TNCs), and also considers both risk sharing and the situation at airports covered by the Performance Scheme.

2.1 Financing national obligations

2.1.1 National obligations

To ensure Flysikring is able to compete fairly with new providers, there should be transparent and cost reflective payments made for any non-trivial obligations it carries on behalf of the Norwegian State and which other future ANS providers in Norway would not have to bear.

To justify additional payments, these obligations must have a positive marginal cost: that is, they are not simply generated as a positive externality of business-as-usual operations. For example the preservation and development of certain competencies will result directly from the continued provision of en-route services and at no additional cost.

Flysikring considers the following as the main national obligations:

- ATCO Training (both Institutional and On-the-Job Training (OJT))
- Aviation Weather Services
- Military ATM Services
- Norway's Eurocontrol dues
- Flight Planning Assistance, AIM and AIS-services
- Airspace Design Competence
- Air Traffic Flow Management (ATFCM)
- High Frequency (HF)-radio provision for Search and Rescue
- Network Services and Surveillance data
- International ATM Competence

Flysikring has indicated that it would prefer "*to establish a new cost base for these common national tasks, with clear assumptions from the Ministry of Transport on cost allocation principles and regulations for all stakeholders involved.*"

The opening of the market to competition may also create an additional national obligation for Flysikring, namely acting as 'provider of last resort'. We discuss this further in section 5.3.2, but in essence this obligation will require Flysikring to provide staff at airports where another ANS provider holds the contract (a) at the start of the contract if the new provider is unable to provide staff; and (b) during a contract if the provider for whatever reason (eg financial failure) withdraws from the contract. In the former situation, the new provider would compensate Flysikring, while in the latter case arrangements would be influenced by the reason for withdrawal.

2.1.2 Financing options

There are a number of ways through which obligations may be financed:

- 1) Allocation to the en-route cost base;
- 2) Allocation to the terminal cost base either transparently as part of an airport ANS contract or as a separate airport service contract;
- 3) Payment by another stakeholder, such as the military;
- 4) Payment by the state.

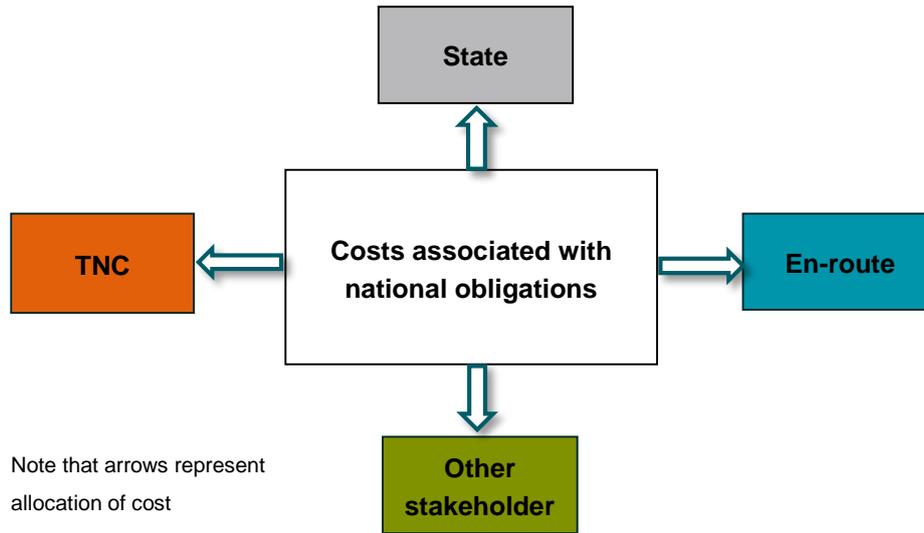


Figure 1: Financing options for national obligations

According to ICAO’s Policies⁵, payment for each obligation should come from the beneficiaries of the service provided, eg en-route, terminal or other users. Where the service benefits multiple users, costs should be shared according to a cost reflective allocation key. However, for some services/obligations identification of the beneficiaries may be difficult or the cost burden imposed might be unreasonable.

To justify compensation by the State we consider the following conditions should be fulfilled:

- Flysikring is obliged by the state to provide a service that a new airport ANS provider does not have to; and
- It is not economically justifiable to fully charge the costs of the obligation to any combination of the different beneficiaries of the services provided.

On the basis of this, our recommendations for each of the national obligations identified by Flysikring are set out in Table 1.

⁵ ICAO’s Policies on Charges for Airports and Air Navigation Services, 2009
http://www.icao.int/publications/Documents/9082_8ed_en.pdf

Obligation	Recommendation	Rationale
<p>ATCO Training (both Institutional and On-the-Job Training (OJT)): Pursuant to Flysikring's Letter of Designation, Flysikring is responsible for providing Norway's total need for ATCO Competence/Training, for both civil and military needs, and also to non-Avinor Companies.</p> <p>Flysikring is also responsible for training of ATSEPs.</p>	<p>Generally, shared allocation, en-route and airport, but additional considerations discussed in section 5.3.1.</p>	<p>For the personnel that are related only to the en-route cost base their full training costs should be allocated to en-route.</p> <p>For ATCOs or ATSEPs in approach or tower competed services we discuss the additional measures required to avoid any competitive disadvantage for Flysikring in section 5.3.1. A new provider should carry the burden of some training costs however we recognise that there are situations where more detailed consideration is required.</p>
<p>Aviation Weather Services</p>	<p>Shared allocation, en-route and airport</p>	<p>As MET observation is provided as part of the tower service by the ATCOs on duty these costs can be directly charged as part of the airport ANS service as long as similar obligations are placed on other providers.</p> <p>Any changes in the organisation of MET service provision as discussed in Part 1 section 5.6.2 may influence the flow of funds but not the entities from which costs should be recovered.</p>
<p>Military ATM Services</p>	<p>Shared allocation en-route and military</p>	<p>Any part of the military services that is not recovered through the en-route cost base and that is not currently charged to other users should be recovered directly from the military to avoid Flysikring being commercially disadvantaged through the provision of these services. Equal treatment should apply to a new provider.</p>
<p>Norway's Eurocontrol dues</p>	<p>100% en-route</p>	<p>These should be fully recovered through the En-route cost base in accordance with generally accepted practice.</p>
<p>Flight Planning Assistance, AIM and AIS-services</p>	<p>Shared allocation, en-route and airport</p>	<p>Capabilities related to en-route services (ie up to the approach boundary) should also be fully charged to the en-route cost base. If this competence is integrated with APP and TWR services then costs should be partly charged directly to the airport. For service specifically related to the airport-ANS service then this should be charged directly to the airport. Note that, as discussed in Part 1, some elements of the AIS information chain, such as data generation (aerodrome charting, procedure design) could be effectively competed in their own right.</p>
<p>Airspace Design Competence</p>	<p>Shared allocation, en-route and airport</p>	<p>Capabilities related to en-route services (ie up to the approach boundary) should also be fully charged to the en-route cost base. If this competence is integrated with APP and TWR services then costs should be partly charged directly to the airport. For service specifically related to the airport-ANS service then this should be charged directly to the airport. Note that this obligation could also be a competed service, as is the case in Sweden.</p>
<p>Air Traffic Flow Management (ATFCM)</p>	<p>100% en-route</p>	<p>Essential for en-route service provision</p>

Obligation	Recommendation	Rationale
High Frequency (HF)-radio provision for Search and Rescue (SAR)	100% oceanic	The need for HF radio provision is a requirement for oceanic airspace and should be part of the oceanic cost base. ICAO rules allow for a number of options in that <i>“the manner in which to determine civil aviation’s allocable share of the costs of the civil SAR establishment concerned is for States to decide.”</i>
Network Services	Mostly en-route but with shared allocation to airport	Essential for en-route service provision and we expect the majority of this cost would fall on the en-route airspace user, though there may be certain elements that are required for airport ANS, in which case there should be a shared allocation and any costs appropriately recovered from the users of the service.
Surveillance data (and other CNS elements)	Shared allocation, en-route and airport	Surveillance data is currently provided as part of the CNS service and charged to each airport on the basis of a fixed allocation strategy. We understand that a more reflective and transparent pricing strategy for this and other aspects of the CNS infrastructure are being developed to more accurately allocate the costs to the appropriate users of the service (for example by data used). This will facilitate the introduction of competition more easily, so that, for example, surveillance data contracts may be put in place either with the new provider or the airport operator, see also section 4.3.
International Competence	ATM 100% en-route for en-route activities Case by case assessment for projects with a terminal focus.	Preserving national ATM competence, eg through participation in ICAO groups, SESAR programme, FAB initiatives etc is generally part of the requirement for the provision of en-route services and should be charged to the en-route cost base. However the allowed expenses under this category should be closely monitored to ensure that this is not also used for commercial reasons. There may be some activities that are currently classed under ‘ATM competence’ that fall into the terminal area, notably remote towers. As decisions are currently taken by Flysikring as a state owned company if a project is undertaken for national benefit rather than for commercial reasons (ie project NPV assessed from a commercial basis <0) there could be an argument for state funding. We recommend that these are classed as a separate area and assessed on a case by case basis.

Table 1: Financing national obligations

2.2 Cost Allocation

Introducing competition creates a greater number of providers between whom costs are shared and this necessitates an even greater need to ensure transparent and cost reflective allocation. The incumbent supplier has an incentive to under-allocate costs to competed services in order to increase its competitive advantage. Potential misallocation ranges from explicit changes in allocation strategies to more subtle changes, eg where more senior - and therefore potentially more costly - staff are given roles within the en-route business rather than within the airport side of the operations. The CAA, as Economic Regulator, must ensure the pricing practices of the incumbent do not prohibit fair competition.

There is no accepted best practice for the allocation of approach cost between the en-route and airport cost bases and a range of methodologies are applied across Europe. An example might be the costs associated with an approach radar, used to identify aircraft in both the approach and en-route environment.

Figure 2 is a graphical representation of the current cost allocation principle for a combined TWR and APP unit. As discussed in Part 1 (section 2.3.3), the combined costs of a TWR-APP airport services are first allocated 60% to TWR and 40% to APP. The APP costs are then further allocated 50% to airport and 50% to ENR. This results in 80% of combined TWR and APP costs being allocated to airport (partially recovered through the TNC) and 20% to ENR (fully recovered from ENR airspace users).

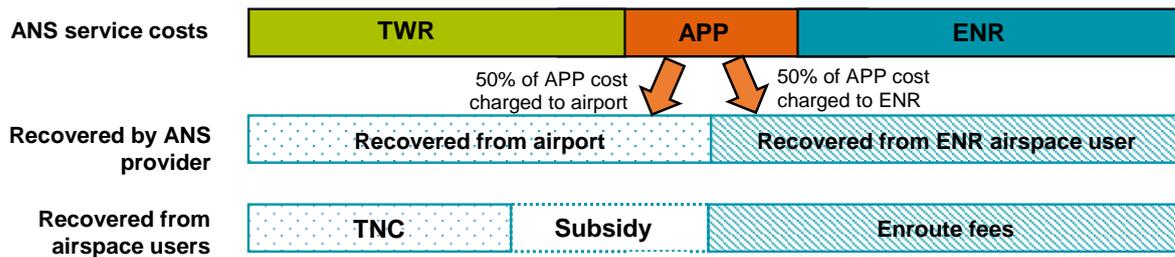


Figure 2: Current TWR/APP cost allocation principle

This model could continue, but may need closer oversight in cases where the ENR and TWR/APP providers are different, to ensure that individual APP costs are recovered from one provider or another, and not both – in other words that the same costs are not being paid twice. Regulatory oversight of allocation principles and monitoring of allocated costs will be required to avoid over-allocation to the en-route cost base but it should be recognised that no model can guarantee cost reflective allocation and all are subject to possible misallocation. A number of potential alternative arrangements for allocation and recover of approach costs are presented in Annex A.

2.3 Payment arrangements and risk sharing

There are a number of different payment arrangements which may be applied to airport ANS services. Before competition can be introduced, decisions will be needed on the contractual model, including revenue mechanisms and risk sharing arrangements. To attract potential bidders, the contract must be commercially attractive, ie allow the ANS provider to cover its costs with an appropriate margin. In the case that revenues charged to users are not sufficient to meet this criterion, the revenue mechanism needs to involve a subsidy element. For different tenders, different arrangements may be feasible and/or desirable and clearly the length of contract will have an influence here.

Table 2 describes a number of models which could be used based on the ability of the ANS provider to set prices, risk sharing and the need and mechanism for subsidy:

Contractual arrangement	Description	Subsidy model
1. Concession model	ANS provider able to set TNC charges to cover costs	No subsidy required
2. Fixed TNC Risk bearing	Tender awarded with ANS provider compensated through TNC charges directly. The ANS provider bears the full revenue risk of traffic changes.	Provider may require an explicit subsidy in addition to user charges as the TNC charges are fixed by the state and may not be sufficient to cover the cost of airport ANS.
3. Fixed TNC Risk sharing	ANS provider compensated directly through TNC charges, with some degree of risk sharing between the airport and the ANS provider.	
4. Fixed price contract	Airport ANS services provided at a fixed price, independent of traffic conditions	Subsidy goes through the airport operator as the fixed price paid to the ANS provider may well be more than user revenues received by the operator
5. Fixed price contract with conditions on traffic changes	Fixed price for services with pre-defined conditions on compensation and service provision arrangements in the context of traffic changes	

Table 2: Possible contractual arrangements

Currently in Norway, the contractual arrangements for airport ANS are with the individual airports (ie Models 4 and 5). In these cases, the revenues of the provider are not directly related to the TNC charges collected from airspace users (by the airport operator) and the ANS provider does not face the direct revenue risk related to a reduction in traffic (nor the reward if traffic is above expectations). The contractual arrangement may include clauses related to changes in traffic, eg fixed price contract for traffic within a percentage range (which does not need to be symmetrical) of the forecast. We discuss the issues further below.

As discussed in section 3.3 of Part 1, it would be possible for the financing of airport ANS provision in Norway to be restructured with the ANS provider as the direct collector of revenues (Models 1-3). If the TNC were set to enable the provider to cover its costs (Model 1), TNC charges would be likely to increase at the majority of airports, even after assuming a reduction of ANS costs as a result of competition. Higher TNC charges could also be contrary to the current policy stance of the Norwegian government, which fixes the TNC at regional airports significantly below costs as part of the strategy promoting connectivity for smaller communities.

To continue with the existing policy to fix the TNC charge below cost, a subsidy will be required, either directly to the ANS provider if it collects the TNC revenues (Models 2 and 3) or via the airport operator (Models 4 and 5).

Currently, the subsidy is directed via the airport operator. As most of the airport operators are part of Avinor Airports, they are able to rely on cross-subsidies within the Group and it is only the privately operated airports of Torp and Rygge that face a problem in this regard.

This arrangement could continue after competition has been introduced, assuming there were no reform/restructuring of Norway's airport sector which somehow prevented Avinor AS from providing the cross-subsidy. In the case that cross-subsidy was prevented, the subsidy could be directed at the ANS provider with the state providing direct compensation for any revenue shortfall between the contracted price and the TNC

charges collected (Model 2). Cost flexibility to changes in traffic could be encouraged through contractual risk sharing conditions (Model 3). However, under the current institutional arrangement we do not see any direct benefits from moving to a model where the subsidy is explicitly provided to the ANS provider (Models 2 and 3). The current arrangement of implicit subsidy through the airport operator due to the inability to cover ANS through TNC charges is likely to increase the motivation to promote strong competition. Additionally the revenue risk from falls in traffic is spread across all Avinor airports, potentially allowing traffic increases and decreases to offset each other.

Assuming the MoTC wishes to maintain its current role in setting airport TNC charges, we recommend that individual airport contracts be maintained at all airports in Norway. This equally applies in the context of the Performance Scheme airports, despite the fact that these airports, when considered as a group, do not require an explicit subsidy, as we discuss further in section 2.4.

The contracts in place at the moment for airport ANS follow model 5, giving the customer the right to demand changes in service level, eg following a change in traffic, within 5 % of the annual price. Changes over 5 % are considered as partial termination, and are subject to negotiation. While we recommend that type 5 contracts with some degree of traffic risk sharing be maintained it will be necessary to consider the most appropriate way to include such risk sharing conditions in a competitive tender: we do not expect this to be the same as the optimal contracts in today's institutional context.

2.3.1 Recovery of costs from en-route users

As mentioned earlier, some costs of the airport ANS, notably the approach service, will continue to be recovered from the en-route users. Provided these costs fairly reflect services that the en-route users benefit from, we believe this cost recovery should continue. This is particularly so, since the costs of the airport ANS cannot be recompensed solely through the TNC and require some subsidy: while opening airport ANS to competition may reduce costs, reductions are unlikely to be sufficient to remove the need for subsidy.

However, the recovery of some costs from the en-route traffic base in a competitive environment reveals other issues which, though not completely preventing the opening of the market to competition, do nevertheless need to be considered. These issues are:

- Risk Sharing
- Setting and recovering the cost base

Ultimately we recommend, during a Reference Period, the following approach is used to recover costs from the en-route provider (shown below in Figure 3):

- The en-route ANS provider collects all en-route ANS charges from users via the CRCO;
- The en-route ANS provider pays the airport operator a fixed payment per year based on the approach cost fixed in the Performance Plan; and
- The airport ANS provider is compensated through the fixed price contract agreed during the tender process.



Figure 3: Recommended recovery of approach costs

This implies the en-route provider bears all traffic risk (if applied) and the cash flow risk associated with traffic being lower than planned: we believe is best placed to absorb these risks. It also provides the airport operator and the airport ANS provider with appropriate incentives; the airport operator to achieve the best price contract and the ANS provider to provide the best service and maximise profits given the fixed contractual arrangement.

In reaching these conclusions, we have considered a number of different alternatives for the flow of revenues set out in Annex A, which also sets out a range of possible options for approach cost recovery based on provider compensation and risk bearing arrangements in the context of the Performance Scheme and Charging Regulation⁶.

2.4 Competition at Performance Scheme Airports

Four of Norway's airports, including two which are potential candidates for relatively early introduction of competition, are categorised as Performance Scheme Airports. This means that there are additional conditions which must be respected, eg on the calculation of charges and risk sharing with users. Additionally the decision to implement a single charging zone has implications for the types of contractual and risk sharing arrangements that can be used at Performance Scheme airports.

2.4.1 Economic regulation of Terminal ANS

From Reference Period 2 (RP2) (2015-2019), terminal ANS services at airports with more than 70,000 aircraft movements are now also covered by the economic regulation set out in the Performance Scheme and Charging Regulations. These regulations replace full cost recovery with a 'determined cost'⁷ model with provisions for risk sharing.

Under Article 13(6) of the Charging Regulation, States may exempt airports with less than 225,000 IFR (Instrument Flight Rules) movements from the traffic risk sharing mechanism. In this case charges are set based on full cost recovery of determined costs: there is no revenue risk associated with lower than planned traffic but providers face cost risk associated with providing services for higher traffic than planned. We understand while a number of states have applied for exemption⁸ Norway has not.

Under Article 3 of the Charging Regulation 391/2013, if a Member State assesses its Terminal ANS are subject to 'market conditions' it may decide not to set terminal cost-efficiency targets, not to calculate terminal determined costs, not to calculate terminal charges and not to set terminal unit rates. Such exemptions are subject to the agreement of the Commission that market conditions have been established in accordance with the

⁶ Commission regulation (EC) No 390/2013 of 3 May 2013, EUROCONTROL

⁷ "Determined Costs" are those fixed as part of the regulatory negotiation and price setting

⁸ Such exemptions have been notified by: Belgium, Cyprus, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Poland, Romania, the Slovak Republic, Slovenia, Sweden and Switzerland and cover 18 TCZs and 44 airports in total.

Regulation. For example, the United Kingdom has assessed its terminal ANS as being subject to market conditions.

2.4.2 Performance Scheme airports in Norway

Four airports in Norway are covered by the Performance Scheme: Oslo, Bergen, Stavanger and Trondheim. The stakeholders in Norway have decided that all four airports should be grouped under a single charging zone, meaning that a single unit rate is applied at all airports. While the Performance Scheme unit rate calculation generates unit rates that vary annually based on forecast costs and traffic, with agreement of the users, a single planned unit rate has been set for all years of RP2.

The cost base included in the calculation of the unit rate relates includes:

- Flysikring ANS costs allocated to these four airports;
- Avinor AS costs associated with ANS provision incurred at these four airports eg depreciation associated with airport-owned ATM/CNS assets;
- MET costs (not subject to traffic risk sharing); and
- NSA costs (not subject to traffic risk sharing).

As Flysikring is paid for its airport services through annual contracts, the financial risk arising from variations in traffic is borne by Avinor AS. To the extent that any cost or traffic risk is borne by Flysikring, it would be determined by the contractual arrangements with the airport, and need not necessarily reflect the TNC revenues collected by Avinor AS.

As all four airports are currently included in a single charging zone, there is likely to be a degree of cross-subsidy from the airport(s) with a lower unit cost (certainly Oslo in view of its high traffic volume) to those with a higher unit cost (because of lower traffic volumes). This is allowed within the Performance Scheme regulation subject to the airports being within the same charging zone.

We consider this arrangement to be a policy decision taken by the MoTC and CAA. In the long run, the MoTC and CAA may wish to revise this position for more cost reflective charging at the different airports but we do not consider this a *condition precedent* for the introduction of competition.

However, the decision to implement a single charging zone has implications for the types of contractual and risk sharing arrangements that can be used at Performance Scheme airports. If the single charging zone is maintained charges and risk sharing are all calculated on a charging zone rather than airport level and are therefore not appropriate to be directly passed on to the airport ANS providers. For example, the traffic risk sharing adjustment is calculated based on the deviation of total terminal service units from planned, which due to the nature of the formula used is not the same as the sum of the traffic risk adjustments at individual airport level.

The Performance Scheme and Charging Regulation do not specify clearly how revenues and risk should be allocated within the charging zone in the case of multiple ANS providers and the PRB in a recent report on Terminal ANS targets acknowledged the range of charging and operating models in Europe⁹. We therefore recommend the current model is maintained while the MoTC and CAA open a discussion with the PRB to ensure alignment of provisions for RP3 with the regulation. Greater clarity on the regulatory

⁹ PRB Proposal on Terminal Air Navigation Services Union-wide cost-efficiency targets for 2017-19: approach, issues and proposal. 27 November 2015

provisions for risk bearing is especially important in the context of greater separation of Avinor Airports and Flysikring as it implies separation of the entity providing ANS services and that bearing the incentives and risks defined in the Performance and Charging Regulations.

We also recommend the MoTC and CAA jointly consider the application of the contestability exemption for Performance Scheme airports deemed to be operating "under market conditions". Equally it is the role of the MoTC and CAA to ensure the underlying principle of the Performance Scheme for cost reflective charging is applied and savings made through the introduction of competition are passed onto users through lower unit rates in future Reference Periods. We note the current charging model means cost efficiency savings at a single airport will be spread over the set of airports within the Terminal Control Zone and consider this a policy decision to be made by the CAA and the MoTC.

2.5 Recommendations on ANS Financial Issues

There are a number of financial issues that must be solved before ANS can be opened to competition.

Firstly it is important to ensure that costs are correctly allocated to the service beneficiaries and that Flysikring is not disadvantaged in a competitive environment by costly national obligations. We therefore make the following recommendations concerning cost allocation and recovery:

- The following national obligations should be included in the en-route (or oceanic) cost based: EUROCONTROL fees, Flight planning, AIM and AIS, ATFCM services, SAR, (mostly), Airspace Design Competence and ATCO Training for en-route ATCOs.
- En-route customers should also be allocated a fair portion of costs related to Surveillance (and other CNS) data, Network Services, Aviation Weather Services and shared training costs for all ATCOs.
- Military ANS services should be financed directly by the military.
- Any other national obligations, including the requirement for Flysikring to act as the provider of last resort, should be approached following same principles, based on the need to ensure that Flysikring is not competitively disadvantaged and with a preference for "user pays" cost recovery, where applicable.
- Approach costs should continue to be part allocated to the en-route cost base in line with standard practice within Europe and to avoid an increase in costs borne by the airport operator. The amount allocated should be based on fixed and transparent principles, ensuring no double charging of approach costs.

Having specified where costs should be allocated it is then necessary to set out payment arrangements for airport ANS services. We make the following recommendations on contractual arrangements and provisions for risk sharing:

- In line with the government aviation policy, the current arrangements for ANS user charges should be preserved in the introduction of competition alongside the use of contractual based payment from the airport operator to the ANS provider. This implies separation of user charges with payment for ANS provision.

- Any subsidy required, due to below cost TNC pricing for policy reasons, should be directed through the airport operator. Approach cost recovery should also be done through the contract between the ANS provider and the airport operator.
- The portion of approach costs allocated to en-route should be reimbursed via a fixed price payment from the en-route ANS provider to the airport operator. During the Performance Plan negotiation a fixed percentage allocation for all airports or per airport type should be used to calculate the approach cost to be included in the determined cost base. In each year of the Reference Period the airport operator should then be paid this fixed amount by the en-route ANS provider. The MoTC and CAA may decide to modify this relationship to pass any traffic related revenue risk or cash flow risk onto the airport operator.
- The MoTC and CAA should open a discussion with the PRB on the possibility to exempt approach costs at competed airports from traffic risk sharing.

Specific considerations also need to be made at the Performance Scheme airports. We make the following recommendations concerning the opening of competition at these airports:

- The current contractual and charging arrangements should be preserved at the Performance Scheme airports.
- The MoTC and CAA should open a discussion with the PRB on the alignment of terminal charging arrangements with the regulation, notably concerning any constraints on who should bear traffic risk.
- The MoTC and CAA should jointly consider the application of the contestability exemption for airports operating "under market conditions".
- In all cases where costs are allocated to services covered by the Performance Scheme, it should be the responsibility of the ANS provider in place at the time of Performance Plan definition to provide forecast costs consistent with European-wide targets.

3 Institutional reform

In this section, we discuss the institutional reform that is necessary to support an opening of the airport ANS market in Norway to competition. We begin by considering the separation of Flysikring from Avinor Airports, before considering the internal reform that is also necessary within Flysikring. Finally, we note the need for Flysikring to have the commercial freedom to compete for contracts both domestically and in foreign markets and discuss the impact of reform on the Economic Regulator.

3.1 Separation of Avinor Airports and Flysikring

3.1.1 Current situation

Whilst the governance and organisation model of Avinor changed in 2014 to separate the provision of ANS services from the airport operator, both companies remain as wholly-owned subsidiaries of the Avinor Group. In a liberalised ANS market, if the current structure were continued, Avinor as the airport operator would be responsible for contracting the ANS provider. There is a risk that under the current structure the market will not view the tender process as independent, discouraging those potential bidders who anticipate Flysikring would be favoured. The current model also raises a dilemma for Avinor AS which, to convince the market of independence, would feel under considerable pressure to award the first tender to a new provider. The running of a tender process through Avinor AS, without separation, may therefore also be seen as a competitive disadvantage to Flysikring. The risk of the first tender failing would increase and could jeopardise the process of introducing competition. Hence, we have argued in Part 1 that this situation should change. The close relationship between Avinor Airports and Flysikring can still be retained, but would necessarily evolve to a customer/supplier relationship rather than owner/subsidiary.

The combination of airport operator and ANSP in a single body is now rare in Europe - only Norway, Finland and Iceland combine the functions at a national level. One of the reasons for this is because there is little synergy between airport operation and ANSP operation because successful airport operation requires maximising use of physical assets whereas ANSP operation is primarily a human-intensive operation. Indeed, several European countries have recognised the benefit of separation and undergone this process. For example, in Spain both airports and ANS were for many years provided by a single company. However, the airports were formed into a separate company which was listed on the Madrid Stock Exchange in 2015. While 49% of shares are in a free float, 51% are still held by Government through its holding company, ENAIRE, which is the ANS provider. In Sweden, Swedavia was formed in 2010 to manage and develop Sweden's state-owned airports, before the introduction of competition for airport ANS. LfV continues to provide ANS as a state enterprise, reporting to a separate Ministry from Swedavia. Somewhat earlier (1998) in Portugal, institutional reform saw ANA divided into three components: an ANS provider (NAV Portugal E.P.E.), an airport operator (ANA SA) and a regulator (INAC).

3.1.2 Proposed structure

The objective of the separation of Flysikring from Avinor Airports is to instil confidence in bidders that the tender process will be fair. In theory, this could be achieved by separating from Avinor Airports just the part of Flysikring that provides airport ANS, and leaving other

services such as en-route within the Avinor Group¹⁰. We recommend though that this hybrid and potential unique model is not adopted in view of the synergies that exist between the two aspects of Flysikring's operations.

Since the operational functions of Avinor Airports and Flysikring are already clearly defined, this proposed split is in practice already well advanced. There are though likely to be a number of shared central services such as Human Resources, IT, and Corporate Communications that serve both airports and ANS, so how these services are to be provided in the future will need to be decided. Options include duplication of some/all functions in both future companies (on scales relevant to demand); concentrating some functions in each company with service provided to the other on some contractual basis; using external agencies to supply services on an as-needed basis; and creating a third service company to support the two operating companies on a commercial basis.

It will also be necessary to ensure that there are formal arrangements for Flysikring to provide ANS services at all airports prior to them tendering to appoint an ANS provider: for most airports it will be several years before such a tender is held, so it is important that Flysikring secures a transparent revenue stream for the services it does provide.

While the sourcing of central services and airport contracts are important high level tasks necessary for the separation of Flysikring, there is of course a need for detailed planning of the separation process, and this is discussed in section 3.1.4.

3.1.3 Reporting Ministries

The separation of Flysikring from Avinor AS requires a decision on the ministries to which both companies will report. The options are for both to continue to report to the MoTC, or for one to move to a different ministry.

In Sweden, the separation of airport operator and ANS provider saw each report to separate ministries, with airports going to the more commercially oriented ministry, and ANS reporting to the one with greater experience of regulatory matters. In the UK, however, prior to privatisation both the ANSP and the state-owned airports authority reported to the Department for Transport. After privatisation of the British Airports Authority to become BAA plc, the Department for Transport remained as the sponsoring ministry, and also has this role for NATS after its separation from the UK CAA its partial privatisation. The UK Government's remaining shareholding in NATS is held by the Department for Transport.

NATCA has expressed a strong preference for ANS in Norway to be organised under the Ministry of Transport and Communication:

'Primarily the ANS-company should be regulated under the Ministry of Transport and Communication as a single state owned company. The provision of ANS is the core-business. The rest of Avinor could be deregulated under the Ministry of Trade, Industry and Fisheries.'

We understand that the rationale behind this position reflects the fact that in Norway state-owned companies with limited commercial interest are regulated under the Ministry of Transport and Communication, albeit with a few exceptions. In NATCA's opinion, such a reporting line can ensure that ANS is delivered at the highest safety standard and service quality. In contrast, state-owned companies which are primarily commercial are attached

¹⁰ We discuss the need to divide Flysikring into regulated and unregulated components further in Section 3.2.

to the Ministry of Trade, Industry & Fisheries and are permitted to compete in the open market.

In practice, both Avinor Airports and Flysikring will both have regulated and unregulated aspects to their business after separation, so that it would be possible to argue the reverse of the NATCA position.

In the short to medium term separation of responsibility to different ministries would increase the complexity of the process and we see no requirement to do so in order to introduce competition, provided that the MoTC considers that it could handle any conflicts of interest that might arise.

3.1.4 Separation process

The separation process is likely to require more than a year to complete and will involve several phases. Establishing the detailed process of organisational change management is a separate study in its own right, but provided below is a brief overview of some of the key steps that would need to take place.

The first step in the process will be for all stakeholders to agree the basic structure of the separation. We suggest that the MoTC leads this aspect and chairs any joint working groups that are established, and ensures that the process moves forward. There will be various bilateral meetings (eg between MoTC and CAA to define the future roles of the Economic Regulator and identify any further legal powers required). In addition to the MoTC, key stakeholders will be Flysikring, Avinor and the CAA, although throughout this process, staff and the unions will need to be consulted and kept informed of the developments.

These series of meetings though should not discuss specific details of individual tenders in order that Flysikring is not inadvertently advantaged.

An initial workshop of all stakeholders to agree a list of issues to be addressed would be worthwhile. The content of subsequent discussions will probably involve the decision on the most appropriate reporting Ministries in the future for the two operating companies as well as the responsibility for and funding of national obligations. The option of establishing a third company to provide centralised services (Human Resources, Finance, Legal etc) should also be discussed, although each shadow operating company should have the right to determine how it sources its needs in these areas. Agreement should be sought on the basis for the transfer of Operations Manuals and any other asset categories to Avinor Airports. A programme for separation should be developed and agreed.

At some stage shadow boards for the future operating companies will need to be appointed: while executive management of the two divisions of Avinor Group may well remain in post (we see no need for change), it will be necessary to have independent board members.

Once high-level agreement has been reached, each stakeholder will need to undertake detailed planning for the separation. The MoTC for example will need to assess whether there are needs for any legislative changes to support the separation (and of course the wider process of opening the market to competition), while the CAA will need to review how it meets any widening of its role as Economic Regulator. The bulk of the detailed planning though will fall on the two operating companies, and will cover resource allocation, asset transfer, sourcing of centralised services and IT systems, premises and potential changes to the many legal contracts to which they are party. If preferred,

rebranding can be performed by Avinor Airports and Flysikring to emphasise and reposition themselves as separate entities in the market.

The final phase of the separation process is implementation. During this phase monitoring and oversight will be required to ensure the sub-tasks are completed correctly and to the agreed programme. Cultural and union issues would need a particular focus. If any unplanned issues arise, mitigation actions should be taken by the responsible party with assistance as necessary from the MoTC.

Overall, the separation of Flysikring and Avinor Airports is likely to take at least a year after a decision is made by Parliament to separate. This minimum time estimate is based on the reform the MoTC is currently undertaking of both the rail and road sectors and which it anticipates will be completed in a year. However it must be recognised that this will consume considerable middle and senior management time, during a period when all major stakeholders may well be busy with other aspects of opening the market to competition.

3.1.5 Recommendations on separation of Avinor Airports and Flysikring

Without full financial independence it is difficult to see how the competition for ANS would truly apply open market principles. Even if Avinor's internal protocols required independent decision-making, potential bidders would need confidence of a fair competition.

The current institutional framework in Norway where Avinor is the owner of the airports letting the new ANS contracts as well as being the owner of the incumbent ANS provider, is expected to be a concern to potential bidders which necessitates a recommendation for full separation of Flysikring from Avinor AS to create a fair market.

3.2 Structure and freedoms of Avinor Flysikring

3.2.1 Organisational reform of Avinor Flysikring

In the previous section, we discussed the need for Flysikring and Avinor Airports to be separate companies, in order for bidders to believe that the bidding process is indeed fair and transparent. This is, in our view, a necessary but not sufficient condition, and further safeguards need to be put in place to ensure that Flysikring does not subsidise its activities in competitive markets from excess profits from its non-competed markets (eg en-route services). The competitive markets are not just the airport ANS markets in Norway, but also those outside Norway, where we consider Flysikring should have the right to participate in available tenders. This situation is common in Europe for example, national ANSPs in Austria, Germany, Sweden, Italy, France and the UK all have consultancy operations (either in-house or as separate companies). Some have established separate companies specifically to provide airport services, for example LfV established Global Aerospace Logistics LLC (GAL), a limited liability company based in Abu Dhabi, to compete for the provision of ANS in the Middle East. Similarly, DFS established Air Navigation Solutions Ltd. (ANS Ltd.) to take over the provision of ATC and Air Traffic Engineering Services at London Gatwick Airport (LGW) for a period of ten years. Others (eg in Ireland, Italy, Denmark, Germany, UK and Switzerland) are shareholders in ventures such as ESSP (the EGNOS operating company) or Aireon (the Canadian company providing satellite based surveillance).

It is the responsibility of the Economic Regulator (be it the MoTC or the CAA in a delegated capacity) to monitor the finances of Flysikring and to define allocation principles

between the non-competed (regulated) and competed (unregulated) business. This may require additional economic regulatory capability and capacity.

In the short term, the Economic Regulator may need the power to audit any bids made by Flysikring to ensure that Flysikring can demonstrate a positive present value in its business model without the need of subsidies from its en-route business.

However, even though this close scrutiny may serve as a temporary expedient, we consider that a more viable and robust longer term option requires another degree of separation. We therefore propose two options as to how Flysikring's operations should be structured into regulated and unregulated parts¹¹. The first option is to maintain Flysikring as a single corporate entity. The variants of this option would be (a) to maintain a single company with two divisions or (b) to have a single holding group with two subsidiary companies. To some degree Option 1(a) is already in place as en-route and TWR/APP services are in separate business areas within Flysikring with clear cost allocation principles for shared costs. The second option would be to form two companies and fully separate the regulated provider from the unregulated provider.

We begin by reviewing the arrangements in place in the UK, which has a single corporate group with separate subsidiary companies before discussing how separation should be implemented in Norway.

3.2.2 Case study: NATS

A ring-fence model has been applied in the UK to NATS Ltd. NATS Ltd is organised into a regulated ANS provider, NATS Enroute PLC or 'NERL', and a services company, NATS Services Ltd or 'NSL'. NERL is responsible for the provision of the En route (UK) Business and the En route (Oceanic) Business and is subject to economic regulation by the CAA through a licence¹² issued under the Transport Act 2000. The "ring-fence" conditions¹³ in NERL's licence are designed to ensure that its assets, cash flows and other financial resources are used solely for the benefit of its regulated business. NSL's role is to compete for and provide contestable air traffic control services both in the UK and in other countries, as well as providing other commercial services, such as consultancy. Although the UK CAA regulates NSL's safety in the UK, the price and quality of its services are not regulated.

Although the existing ring-fence in NATS Ltd is considered to have been effective as no significant problems have been encountered since implementation, concerns were raised by the CAA when NERL was granted certain consents that effectively weaken the ring-fence¹⁴. The concerns raised included whether:

- NERL has insufficient access to financial resources (including liquidity) and other resources such as staff technical expertise and senior leadership focus etc.
- NERL has financial exposure to risks arising from activities outside the ring-fence.

¹¹ We acknowledge that there are a broad range of possible corporate structures and discuss only the high level options.

¹² 'Air traffic services licence for NATS (EN ROUTE) Plc', UK CAA, 2015

¹³ Condition 5 of the licence enlists conditions regarding 'Availability of Resources and Financial Ring-Fencing'; whereas Condition 9 implies strict prohibition of cross-subsidies between separate businesses, 'where such cross-subsidy has or is intended to have or is likely to have the effect of preventing, restricting or distorting competition in any market for the provision of air traffic services.'

¹⁴ 'An ad hoc review of NATS related risks', UK CAA, 2012

- The NERL Board put the objectives of other NATS group businesses above those of NERL.

In response to such concerns, we understand that the CAA has submitted an initial proposal¹⁵ to address these issues. Some of the recommendations proposed by the CAA are:

- Analysis of whether NERL should be required to have its own staffing resources within the ring-fence rather than contracting staff with NATS Ltd.
- Consideration of a licence modification that would more effectively scrutinise the inherent risk arising from a weak part of the ring-fence.
- Requirements for regulated company boards to contain independent directors to mitigate any conflicts of interest faced by the boards of NERL and NATS Holdings. In this way, unnecessary regulatory intervention can be prevented without eliminating the possibility of NERL experiencing financial stress.

In addition to these concerns, we understand that the ring-fence constrains NSL from acting in an optimal commercial manner, for example, by inheriting the same costly employment package as NATS Ltd they can struggle to be competitive in some markets. We understand that NSL is also prohibited from generating more than a certain proportion of the combined NERL and NSL revenue.

3.2.3 Option 1 for Flysikring: Separation into regulated and unregulated entities within a single company

The first option is to maintain Flysikring as a single company. The variants of this option would be (a) to maintain a single company with two divisions or (b) to have a single holding group with two subsidiary companies (the UK model).

Both variants allow for ring fencing. The purpose of the ring-fence regime is to prevent anti-competitive cross-subsidy between the regulated and unregulated business through favourable contractual arrangements; and also to reduce the risk of financial or operational stress to the regulated body from the unregulated body. The contractual arrangements between the two divisions/companies covering the use and pricing of shared resources (staff, premises, systems) are intended to ensure transparency in cost allocation, facilitating oversight and audit by the Economic Regulator. They represent an additional measure alongside Board and Management governance in helping to ensuring that Flysikring's resources are used properly and that the regulated division is protected from exposure to higher risk activities conducted by its counterpart. These risks usually have low probability of occurrence but the impact on the entity could be significant, and therefore should not be neglected.

In practice, this relationship can become complicated, especially with respect to staff sharing and inter-division/company payments. Therefore, further consideration will be needed from the Economic Regulator when it assesses, defines and subsequently audits the exact contractual details of the ring-fence to limit the areas of ambiguity that might permit some cross-subsidies.

One of the advantages of this option is that it allows flexible sharing of staff (in terms of numbers, experience and expertise) and of other resources. One aspect of this is that it permits staff sharing by allowing allocation of working hours between both

¹⁵ CAP 1287 'Initial proposals on modifications to NATS (En Route) plc licence in respect of Governance and Ring-fencing', UK CAA, 2015

divisions/companies. This also means that expertise of the more experienced staff can be exploited across both business areas, enhancing the likelihood of successful performance. Retaining all resources in the same entity provides scale (and with it potential economies), stability, sustainability, and global market presence.

A disadvantage of ring-fence may mean that establishing new staff contracts is more difficult. While competitive pressures may cause the commercial (unregulated) division/company to seek cost reductions, the regulated division/company can only experience cost pressures applied by the Economic Regulator. A consequence of this is that the unregulated division/company cannot compete effectively for new contracts and shrinks in size as it loses existing business.

A further potential downside of this option is that the interests of the two parts may diverge over time.

One of the objectives of economic regulation is to avoid a scenario in which the commercial part comes under financial stress, in turn jeopardising its ability (perhaps for cash flow reasons) to make inter-division/company payments which in turn would have an impact on the regulated business. In addition, the centralised costs which would be funded by both parts may now have to be borne by the ring-fenced body.

Advantages	Disadvantages
Potentially less change from current arrangements	More difficult to revise staff contracts
Retains potential for scale economies and global market presence	Consequently more difficult for commercial division/company to win competitive tenders
Allows flexible sharing of staff (numbers, experience, expertise) and other resources	Commercial activities may still have an impact on the regulated division/company despite good regulatory oversight
	Potential divergence of interests

Table 3: Advantages and Disadvantages of Option 1

3.2.4 Option 2 for Flysikring: Separation into two companies

This second option involves the creation of two different companies: a regulated company does not compete for its business and an un-regulated company that competes for commercial contracts in the free market and therefore does not require any economic regulation. The issues associated with this option are similar to some of those relating to the separation of Flysikring and Avinor Airports, namely the loss of scale economies, staff experience and expertise.

One advantage of this option is that it should be easier for the Commercial company to negotiate changes in staff's terms and conditions covering working hours (subject to safety regulations), salaries and pensions. Staff will recognise that the alternative to accepting some change in these aspects is that the company will be unsuccessful in tenders and that their employment terms might well change anyway, and the identity of their employer would probably also change. Conversely, the pressure for change in the

Regulated company would be much less. Modifications to the pension scheme are discussed in more detail in section 5.2.2 and would need to be aligned with the proposed timeframe for company separation to ensure the desired division of liabilities.

Full corporate separation would provide complete protection of the Regulated company from the consequences of bad decisions or bad luck on the part of the Commercial company: should this happen and the Commercial company encounter severe financial stress, it would simply cease trading and its services would be replaced by other commercial ANS providers.

As discussed in Part 1, staff optimisation remains the most effective method to improve cost efficiency of the overall business. The loss of a common pool of operational staff and the possible need to duplicate central support services across the two companies inherently means that costs would, all or other things being equal, increase in the Regulated company, while in the Commercial company the benefits of new staff contracts would need to be greater than the loss of the scale economies.

One disadvantage of this option would be the loss of expertise from the staff pool as staff would no longer be shared but would be in one company or the other and could not move between them (except via the open jobs market). Additionally, decisions would be needed on which staff went to which company, and this would not be easy: which is the successor company and which is the new company? Should staff be given a choice?

Advantages	Disadvantages
Opportunity to offer different terms and conditions of staff contracts hence reduction in overall cost for the Commercial company	Create potential additional costs from lost synergies ('centralised costs')
Regulated company completely protected from business failure of Commercial company	Loss of staff expertise and experience in both companies
Less regulatory oversight required	Two major organisational changes for Flysikring (firstly to separate from Avinor as discussed in section 3.1 and then to separate into two companies)
	Need to decide which staff go to which company

Table 4: Advantages and Disadvantages of Option 2

3.2.5 Allocation of services

Irrespective of the choice made for Flysikring's structure, it will be necessary to define the scope of services in each part. We set out below our view of the allocation of the main air navigation services between the two parts of Flysikring. AFIS is not included as all staff are currently employed by Avinor Airports.

Service	Allocation	Rationale
En-route	Regulated	En-route services is currently provided by Flysikring and is subject to economic regulation by the CAA to ensure any profit gained is redistributed back to the airspace users.
Centralised APP	Probably Regulated	Complexities may arise if Farris TMA is competed in totality later in the tender process and Oslo ATCC remains non-competed. Consideration required on how Farris TMA should be allocated.
TWR and APP	Unregulated	Generally capable of being competed
CNS	Unregulated (at airports), but regulated for en-route	Provision of CNS service is currently supplied by Flysikring at most airports except Oslo. Airports already able to choose to self-supply or change their CNS provider. CNS infrastructure for en-route services should be regulated as part of the en-route service.
AIS	Unregulated	Certain components of these services can be outsourced, but aspects like AIP and NOTAM publication will remain a monopoly and should be regulated

Table 5: Allocation of services between Regulated and Unregulated

3.2.6 Recommendations on institutional change of Flysikring

While close regulatory scrutiny may be an acceptable approach in the short term, an internal reorganisation of Flysikring to clearly separate non-competed (regulated) services from competed (unregulated) services is recommended as a more viable long term solution. We have set out two options and discussed the advantages and disadvantages of each. It is important to stress however that the importance of each advantage and disadvantage varies greatly: for example, a feature of one model may offer some benefit in a peripheral area or avoid some risk with a low probability of being encountered. Equally, it may be possible to avoid some of the disadvantages.

While the ultimate decision in this area rests with the Board of Flysikring and would need to be agreed with the government, as the owner, and the Economic Regulator, we recommend moving to Option 1(b): the establishment of two subsidiary companies under a single holding company. If this is viewed as not working effectively, then Option 2 is still available for adoption at a later time. While Option 1(a) does offer some protection from cross-subsidy we believe that Option 1(b) has additional benefits of providing independent Board supervision and externally audited accounts which in the longer term may require less active involvement by the CAA, whose role concerns review of ring fence conditions and compliance monitoring rather than auditing of cost allocation and tender pricing.

In Option 1, it may still be possible to negotiate lower cost salary and pension packages with staff and their union representatives and this will influence the course which Flysikring prefers to follow. Such negotiations would be with either those staff who predominantly work in the unregulated company or, in an ideal world, with all staff.

We believe that the additional benefits of full corporate separation (ie Option 2) are limited as the likelihood of catastrophic commercial decisions is low, especially with good economic oversight and strong Board governance. Option 1 also involves less organisational disruption.

The scope of competed and non-competed services and the respective cost allocation algorithms should also be agreed by all stakeholders, with the Economic Regulator having the ultimate decision.

With these safeguards in place, there is no reason why Flysikring's unregulated division should not be allowed to compete in both domestic and international markets. This competition should also be allowed in sectors outside ATM, for example, in the provision of CNS services in the telecommunications sector.

3.3 Economic Regulator

It is worth noting, that the implications of the institutional reform discussed above will have a knock-on impact on several other stakeholders, in particular the Norwegian CAA as the economic regulator. This impact needs to be carefully considered, as it is likely to require the CAA to increase its resources as well as its knowledge, particularly in the area of economic regulation as it would be required to scrutinize the financial affairs of Flysikring (and any divisions or companies separated from it) in closer detail. The new or expanded economic regulatory responsibilities of the CAA may potentially include:

- Oversight to ensure independence of a separated Flysikring from the airports business, for example independent directors that prioritise the interests of the different businesses.
- Required input during the separation processes of Flysikring from Avinor and potentially also into further divisions or companies
- Any new roles or powers for example in regard to price-setting of TNC charges that may be a necessary part of a competed market or the power to audit any bids made by Flysikring to ensure that Flysikring can demonstrate a positive present value in its business model without the need of subsidies from its en-route business
- Monitoring the finances of Flysikring and defining allocation principles between the non-competed (regulated) and competed (unregulated) business, for example the use and pricing of shared resources (staff, premises, systems)

4 Asset and infrastructure ownership

4.1 General ownership and control principles

Ensuring the correct structures for asset ownership and access is an important feature for the opening of ANS to competition, as smoother transitions from one provider to another can be facilitated by optimal ownership structures.

In general, the introduction of new service providers at the airport level is eased if the airport owns all assets specific to ANS at that airport. This covers both fixed assets and intangible assets such as Intellectual Property (IP) rights to, for example, airport operations manuals. For assets that are not specific to the airport ANS service (ie they are shared between a number of airports or en-route users), there are number of different options for ownership.

For all assets it is important to allocate ownership and the responsibility for maintenance, upgrades and replacement, so that service providers can factor this into their bids. We anticipate that bidders would take any additional risk or uncertainty surrounding maintenance and replacement obligations into account for their price setting. It is therefore important to clarify these issues up-front in order to gain maximum benefit from competition.

4.2 Asset requirements

A new airport ANS provider will require access to and use of a number of assets:

- Local infrastructure and equipment;
- Local intellectual property, and particularly the Operations Manual; and
- Centralised information and systems.

An ANS provider requires use of the airport buildings and local ATM and CNS systems. In general, these assets have already been transferred to Avinor Airports. However, Flysikring owns the Operations Manuals for all airports, having developed them over a number of years. An ANS provider will need these manuals in order to satisfy safety requirements.

The local ATM system needs to interface with systems covering neighbouring airspace and process related data streams eg flight data. At present, flight data processing is performed centrally by the national ANSP, with a 'thin client' at each airport. Licence restrictions have meant that NATCON is owned by Flysikring and not the airport and furthermore that any transfer to the airport could be difficult. The options are therefore:

- The airport continues to use the NATCON system and sets up access arrangements (see section 4.3) that ensure the airport ANS provider can use the flight data
- The airport purchases a dedicated tower flight data processor (FDP) to replace NATCON and establishes, where necessary, appropriate interfaces to NATCON (alternatively, flight data could be provided directly from the Central Flow Management Unit in Brussels)

The ANS provider also requires access to a number of other data streams or sources including surveillance data from radars or surveillance sensors outside of the airport perimeter. Much of this data is sent (or planned to be sent) via a closed network, STAMNET, which is owned and operated by Flysikring.

A need for coordination on replacement decisions may also suggest a review of ownership. Certain airport-owned assets may be used for services other than airport ANS and any decisions on their replacement or retirement should be coordinated with all those that use the asset. For example there may be airport-owned nav aids that are also used as way points on other routes not related to the airport. While it will not be possible to avoid having to coordinate centralised decisions with the airport, assets located at the airport and currently owned by the airport but related to the centralised CNS infrastructures could be transferred to the provider of the CNS services.

4.3 Access and pricing for centralised assets

For assets that are not airport specific, and cannot be decentralised (ie breaking a single fixed asset into local (airport specific) and centralised systems) there are a number of different access agreement and pricing options that may be applied.

There are a number of assets for which access arrangements may be required. The NATCON ATM system is currently owned and operated by Flysikring as are other CNS assets such as surveillance sensors located outside the airport perimeter.

We consider only the options that preserve the ownership rights of the incumbent (viz Flysikring), as there is little to justify a change in ownership of the centralised asset, given its use in the provision of en-route services and the related engineering experience and competence that sits with the incumbent. It would be possible to have a shared ownership model between the en-route provider and the airport operators. However, this would add additional coordination costs but would not solve the underlying issue related to the inability to separate some asset ownership to airport level.

Table 6 shows three possible options based on the conditions for access and access payments.

Access rights	Access payment	Payment calculated on
1. Regulated access provided to all airports/ ANS providers	Paid by the airport/ANS provider	Fixed and regulated allocation code
2. Access provided on the basis of a commercial negotiation	Paid by the airport/ANS provider	Commercial negotiation
3. Regulated access provided to all airports/ ANS providers	No payment made as system fully charged to the en-route cost base under the justification that the system is a pre-requisite for the provision of en-route services.	N/A

Table 6: Access payment options

Ultimately, in view of the monopoly power that the owner and operator of the centralised assets will have, the MoTC or CAA will need to impose on Flysikring an obligation to provide access to all airports. Such an obligation would of course weaken Flysikring's position in negotiations (Option 2), so that the economic regulator would need to be prepared to intervene (perhaps on appeal) and set or arbitrate a price (essentially Option 1). For both these options, it may be more appropriate for the airport operator (rather than the ANS provider) to make the payments to Flysikring, and if appropriate conduct the negotiations (if necessary with the support of the ANS provider). In this way, the need for each bidder for a tender to have negotiated an access price would be avoided.

Depending on the asset in question it may be possible to justify the allocation of all costs to the en-route cost base (Option 3) and thereby oblige Flysikring to provide free access to all airports. In Sweden, for example, surveillance data is provided at no charge to all airports.¹⁶

4.4 New assets and improvements

In certain situations, it may be necessary for new or replacement assets to be acquired during the course of an ANS contract. For example, one of the options recommended in this report is the provision of ATC services at some smaller airports. Such a development would require investment in facilities and equipment, and the ownership and responsibilities for such investment need to be made clear. In this particular example, the type of the investment may well influence which party makes it: if a traditional tower solution is adopted, investment might be made by the airport operator, while if a remote technology solution were followed, investment might lay with the new ANS provider.

Flexibility of investment may be useful, but responsibility between parties for specification, funding, and implementation of the plans is essential. Equally, there must be clarity over the fate of the assets involved at the end of the contract period, and if asset ownership is transferred a well-defined mechanism for determining its value.

Similarly, some assets owned by the airport may need to be improved during the course of a contract, and this improvement might be best performed by the ANS provider. For example, the airport's Operations Manual will need to be kept current by the ANS provider. However, ownership of the Manual and the intellectual property which it contains must remain with the airport operator to ensure ease of a future transition to a different ANS provider. Improvement of other assets may not be so predictable, so that provision needs to be incorporated into the airport-ANS provider contract to agree the need for improvements and if and how the ANS provider is to be recompensed for this.

4.5 Managing asset lifecycles

While access and pricing arrangements will be required to ensure that a service can be opened to competition over the longer term, it is equally essential to ensure that the correct incentives and procedures are in place for asset management and replacement.

As discussed earlier, to facilitate the introduction of competition, airports should own all assets related specifically to airport ANS services. The airport operator therefore also has responsibility for managing the asset lifecycle. Maintenance and engineering services for airport assets may be sourced in-house, contracted to the new ANS provider or contracted separately. An airport may choose different arrangements for different levels of maintenance, depending on the level of internal capability eg Level 1 in house but Levels 2 and 3 contracted to external parties. In general, it would be prudent business practice for the airport operator to identify in advance the areas where the ANS provider would be better placed to be responsible for maintenance and to include this responsibility in both the initial tender and the subsequent contract.

As far as possible upgrade cycles for airport-owned assets should be capable of being managed independently of decisions on centralised ATM or CNS assets. Conversely,

¹⁶ This could be interpreted as contradictory to the principle of "user pays". However there is equally an argument that there is zero (or very low) marginal cost of data provision to airports, given that it must be provided for the en-route service.

replacement of centralised ATM assets would need to ensure that local systems remained able to interface.

4.6 Transition responsibilities

Asset ownership is important not just at the beginning of a contract for airport ANS. During the course of the contract, when the ANS provider is making use of the assets of other parties, there need to be legal provisions to protect the interests of all parties. We have discussed the matters of improvement, replacement and maintenance above, but other aspects need to be considered.

The starting point will need to be an inventory of all assets and their condition. This will also be the end point of the contract, with provisions made for any compensation to the asset owner for excessive wear and tear. There will also need to be provisions for insurance and indemnity policies in the event of failure or mis-use of any of the assets.

Terms for access to assets and facilities prior to the start of the next contract need also to be set out clearly.

4.7 Recommendations for asset ownership and pricing

While most equipment located at the airport is already owned by the airport (thereby facilitating the introduction of competition), it is important that before the market is open to competition a full inventory is prepared for each airport. Any outstanding airport-ANS specific assets that are not owned by the airport should be transferred, probably based on a historic-cost related payment. Ownership of intellectual property, and certainly Operating Manuals, should also be transferred. In this case, a fair-value payment methodology should be applied: historic-cost is not always applicable in the case of IP.

In the long run we recommend that the ATM system be divided into its local airport components and the centralised platform. The airport should own the local component and interface with the centralised system that is used for en-route. Flysikring, as the en-route provider, would then be obliged to provide access through the interface to new providers or airports; to allow the airport or new provider to interface using a new local system; and to ensure that any upgrades to the centralised system are also interoperable with existing airport local systems.

We understand that there are plans to upgrade the current NATCON system and that the new system may offer opportunities for more standard interfaces. While it would be ideal for this upgrade to be complete before the introduction of competition to the airport ANS market, this should not be a reason for delay. Introduction of new airport ANS providers should though both recognise the likelihood of an impending upgrade and allow for some time-limited interface with NATCON. Upon completion of the upgrade, any locally separable systems should be transferred to the airport operator, with payment to Flysikring based on agreed principles eg gross book value plus a margin.

Flysikring, as the en-route provider, should retain ownership and control of the centralised system and should be obliged to provide the necessary data streams to the new provider or airport. These should be assessed on a case by case basis to see if full allocation to the en-route cost base can be justified.

Access arrangements for centralised CNS assets need to take into account the institutional structure of Flysikring and the location of the CNS division if any degree of internal separation (ie between regulated or unregulated parts) is adopted. In any case regulatory oversight and interaction may be required to oblige Flysikring both to provide

the required access or outputs and to apply cost reflective pricing. National surveillance and navigation infrastructures will remain a national monopoly and therefore cost-reflective pricing cannot be assumed, especially in the context of the direct contracting with Flysikring's competitors for airport ANS.

A greater degree of separation between Avinor Airports and Flysikring also implies a potential need for more formalised agreements on asset maintenance and replacement. As discussed above the replacement of centralised ATM assets will need to ensure that local systems remain able to interface with centralised systems.

Separation also emphasises the need for airports to build up ANS competence: up to now Flysikring has advised airports on their requirements. Increased ANS knowledge at airport level is important for maximising the benefits of competition as it allows lower regulatory intervention on asset related issues and greater flexibility for the airport and new provider in optimising asset use and replacement decisions.

5 Employment and people

5.1 Introduction

ANS provision depends on skilled and experienced staff (often needing knowledge of the local situation of their airport). Because of this dependency, employment costs can be a significant proportion of costs. This is certainly the situation in Norway where high salary costs are accompanied by a heavy pension burden. This leads to a paradox where the desire to lower ANS costs is one reason to open the market to competition while there is a significant motivation to a new ANS provider to retain existing skilled staff.

In this section, we begin by discussing the legal issues associated with the take-over of activities by a new provider, and the rights and obligations of current and future ANS providers and of staff. We then discuss the training of ATCOs, and other aspects of the need to ensure the supply of ATCOs.

5.2 Legal requirements and constraints

In a safety critical service such as ANS, safety regulations play a part in the working hours, rest periods and shift patterns of ATCOs. We assume that these requirements continue irrespective of the number and identity of the airport ANS providers. We highlight here the Norwegian laws which detail the nature of the agreements on the transfer of staff from incumbent provider to a new provider. We also outline the legal constraints on the new provider to change the terms and conditions (working hours, salary, pension etc) of transferring employees, as well as the obligations of Flysikring to those staff that choose not to transfer to a new provider. These issues are associated with the ability of the airport ANS providers to reduce total staff costs.

5.2.1 Conditions on Transfer of Undertakings

The Norwegian Working Environment Act implements Council Directive 2001/23/EC¹⁷ (Section 16-2 subsection 2) has rules on transfer of collective agreements and individual terms laid down within the collective agreement:

“The new employer shall be bound by any collective pay agreement that was binding upon the former employer. This shall not apply if the new employer within three weeks after the date of transfer at the latest declares in writing to the trade union that the new employer does not wish to be bound. The transferred employees have nevertheless the right to retain the individual working conditions that follow from a collective pay agreement that was binding upon the former employer. This shall apply until this collective pay agreement expires or until a new collective pay agreement is concluded that is binding upon the new employer and the transferred employees.”

We understand though that if the new provider indicates within the three weeks that it does not wish to be bound by the existing collective agreement (which is currently renegotiated every two years) and it is terminated, that any union representing staff may require the new provider to enter into negotiations to develop a new collective agreement.

The incoming provider is obliged to continue the same terms and conditions of employment to affected employees, including access to a pension scheme, although this need not have the same terms as the existing Flysikring scheme (as discussed further below). It will be a matter for the incoming provider to seek to negotiate any changes to

¹⁷The Norwegian Working Environment Act, Ministry of Labour, 2012
<http://www.arbeidstilsynet.no/binfil/download2.php?tid=92156>

terms with potential employees if it wishes to improve efficiency, compensate for a reduction in pension benefits and attract controllers to continue in position. All current employees have to be offered positions (on their same terms if there is no agreement to vary them), and if the new provider has too many staff, it has the responsibility to lay-off surplus staff in accordance with legislation on redundancy.

These rights apply of course only to transferring employees. The terms and conditions of any new employee would be negotiated afresh, albeit might be governed by a new collective agreement entered into by the new ANS provider, if the new employee were to join the trade union concerned. Consequently, different terms and conditions may apply to employees performing the same work¹⁸.

5.2.2 Pension obligations

It is mandatory for all employers that are taxed in Norway to provide a supplementary pension scheme. There are two main types of pension schemes: Defined Contribution schemes and Defined Benefit schemes. Within the Defined Benefit category there is also a differentiation between Public schemes, run by the state, and Private schemes.

The pension schemes at Avinor are funded through payments to Statens Pensjonskasse (the Norwegian Public Service Pension Fund, SPK) and are on a defined benefit basis. Additionally, they are inflation-linked and provide for on-going pensions to a surviving dependent after the death of a former employee. Different conditions apply depending on the number of years of service and position: for example, in general after 30 years' service in a full-time position, staff reach the maximum possible entitlement of 66% of final salary.

According to the Norwegian Working Environment Act (Section 16-2 subsection 2),

“The new employer may elect to make existing pension schemes applicable to the transferred employees. If the employees' previous pension schemes cannot be maintained after the transfer, the new employer shall ensure the transferred employees the right to further earning of pension entitlement through another collective pension scheme.”

A Defined Benefit pension scheme can be very expensive for an employer (Flysikring contributions to the Defined Benefit Schemes were 24% of revenue in 2013), and in many countries such schemes are being phased out and replaced by Defined Contribution schemes. Statens Pensjonskasse does not permit a new, private sector¹⁹ ANS provider to use it as its pension fund. This will then require the new ANS provider to establish alternative pension arrangements for its Norwegian employees. If the new provider has an existing pension with members, it may offer this to new employees. Otherwise, it is obliged to create a new scheme with the same benefits as the employees' previous scheme. We understand that it is common for companies taking over activities formerly carried out by state sector entities (and hence with state sector pension schemes) to establish a new Norwegian company with a new, lower cost (almost certainly Defined Contribution) pension scheme before it takes over activities from the state entity.

During the transfer, a new provider in principle may change employees' pension rights in the new pension scheme. Employees transferring to the new ANS provider will already

¹⁸ Collective Agreements in Case of Transfer of Undertaking, Meeting of European Labour Court Judges, Sep 2014 http://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---dialogue/documents/meetingdocument/wcms_337910.pdf

¹⁹In the sense that the Norwegian State is not the ultimate owner of the ANS provider even if the government of another state is

have earned a pension entitlement through employment with Flysikring. We understand that the liability for the pension entitlement of anyone leaving the employment of Flysikring voluntarily is carried by the State: Flysikring has no further liability. However, it is important to clarify that this is also the position if staff transfer to another provider (rather than simply leave the company), and this needs to be clarified.

Regardless of whether the liability is transferred, Flysikring would be at a competitive disadvantage against new ANS providers unless it were able to move to a lower cost Defined Contribution pension scheme. It is legally permitted to move to such a scheme but would clearly need to negotiate this with its trade unions. Such an agreement would be a significant advance for Flysikring.

However even if a Defined Contribution scheme was successfully negotiated Flysikring would still be at a cost disadvantage because it would retain the liability to provide the Defined Benefits accrued up to the date of change in schemes. Additionally we understand that if the pension scheme changed there is no current provision for the previously accrued liability to be transferred to the state when staff leave. This situation contrasts with the treatment Defined Benefits liability if member simply leave the company (as discussed above), where the State assumes the liability.

Given the significant cost associated with the pension scheme the likelihood of Flysikring retaining airport tenders would remain low and consequently the state would face the liability, either directly when staff transfer or indirectly through worse financial performance of Flysikring and Avinor Airports, of which it is the sole owner.

In our opinion, it would therefore be reasonable for the State to consider assuming the liability, at least for the services open to competition, should Flysikring be able to negotiate with the unions a change to a Defined Contribution pension scheme, which in itself would be a significant challenge. Given that the cost of Defined Benefits increase literally every day, the sooner this is achieved the lower would be the State's liability. Limiting the scope of the transfer of pension liability to the services that are opened to competition would also limit the exposure of the state and may be facilitated by the separation of the regulated and un-regulated parts of Flysikring, as discussed in section 3.2.

We acknowledge that this will be a difficult undertaking for Flysikring and advise that MoTC work to facilitate change. If it is not possible to change to a Defined Contribution scheme we recommend that the MoTC evaluate the long run impact of the current pension costs on Flysikring's ability to compete in the market and consider appropriate measures to support a level playing field. Other European states have given ANS providers support in this area.

5.2.3 Non-transferring staff

Staff cannot be forced to move to a new provider, and may opt to remain with Flysikring. In compliance with both Norwegian employment legislation and the employee's contract, Flysikring would then need to decide whether to transfer the employee to other activities, in many cases at another location, or make the employee redundant.

5.2.4 Trade Unions

Although the main trade union representing ATCOs (NFF) is a free standing union, a number of the other trade unions representing Flysikring staff that might be affected by the opening to competition are branches of larger parent unions representing employees in different areas of the public sector. The unions will need to decide if they are still able to

represent employees no longer working for a Norwegian parastatal organisation but for a private sector company.

5.3 Ensuring adequate supply of ATC professionals

A prerequisite of successful service transfer relies on the adequate supply of qualified ATC personnel. Hence, staff training for both new and existing ATCOs is essential. As the Norwegian ANS market becomes more liberalised, it is important to ensure that Flysikring is not disadvantaged by its training obligations. However, during the transition from Flysikring to another provider, in order to ensure continuous and reliable service provision, contingency measures have to be put in place to prevent any service disruption.

5.3.1 Staff training

As the current responsibility for ATCO and ATSEP training (both for civil and military needs) lies with Flysikring as one of its national obligations, it is important to decide how the training should be organised when the ANS market is opened to competition. In section 2.1.1 we discussed staff training with a prime focus on cost recovery. In this section we focus on the responsibility for training.

As the provision of ANS service is to be opened to competition with new providers entering the market, it would be a competitive disadvantage for Flysikring to be burdened with all staff training costs in Norway. A common practice in most European countries is for this obligation and cost to fall on any ANS provider. The CAA should ensure that any new ANS providers are certified to provide training for ATCOs and ATSEPs for approach and tower services.

Flysikring has expressed concern that new ANS providers would not undertake any training, but would simply entice controllers to leave Flysikring, and that its supply of ANS services in the north of Norway would be particularly vulnerable.

NTL Luftfarten has also expressed its preference for government involvement in setting “*requirements for minimum skills for companies that offer air transport services*”. For provision of ANS service at Military airports, ATCOs should have the required license rating and security clearance for military air operations and military airspace management, which generally means a longer time and higher cost for training.

At the same time, however, it is essential for Norway to ensure that it has adequate trained staff, a need reinforced by the requirements for the ability to speak Norwegian. This need is why a national obligation has been imposed on Flysikring. The time required to train ATCOs is sufficiently long that realistically it may not be appropriate to rely on foreign airport ANS providers to share part of this national obligation: a new provider will have a relatively small number of controllers and anticipate the need for very few additional controllers. Even if it trained a small number, it would not be able to guarantee a career path. Economies of scale suggest that training should remain a national obligation, but necessarily the satisfaction of this will need to change, and there are two possible approaches.

One approach is for the national obligation to remain with Flysikring as it has all the necessary selection, recruitment and training processes in place. It is also probably in the best position to assess the total number of *ab initio* personnel that should be taken on each year. However, it would clearly be unfair on Flysikring if it were to carry the costs of training new ATCOs and ATSEPs, only for them to be recruited by its competitors. Trainees might be indentured to Flysikring for a certain number of years, perhaps at

Flysikring's discretion. Flysikring's cost disadvantage might be reduced somewhat if some form of 'transfer fee' to cover training costs were introduced, but Flysikring would still bear the risk of carrying costs if more controllers were trained than were subsequently needed. Some degree of financing of training by MoTC might be necessary with this approach.

An alternative approach would be to transfer the responsibility and funding for the recruitment and training of ATCOs to the CAA. The CAA would need initially to draw on the expertise of Flysikring to develop this role. There would though need to be an obligation on all airport ANS providers to co-operate with the training and accept trainees at their facilities for the on-the-job elements of the training. However, the CAA would be a 'neutral' provider of new controllers to satisfy the requirements of private airport ANS providers, of Flysikring and of the Military as required. There could though be a temporary gap in the supply of new controllers, while training of the first batch is completed (at least two years required). However, by increasing the pool of available Norwegian-speaking ATCOs, service cost reductions might be achieved by lowering the salaries of ATCO. It is also possible that the salaries and benefits of trainees might be lower with the CAA than with Flysikring, particularly if they were employed on training contracts, possibly in conjunction with a university or other training institution. Conversely if adequate measures are not put in place to ensure a sufficient supply of controllers there is a risk that costs increase as salaries are negotiated up as competitive providers must meet the conditions of the unions.

In the future relaxation of the Norwegian language requirements would increase the supply of controllers, though even without the language barrier there may be difficulties guaranteeing adequate staffing for the less attractive positions in Northern Norway.

5.3.2 Contingency

Contingency measures need to be in place to maintain service provision when a new provider commences service in the case existing staff choose not to transfer to the new provider, or if a new provider subsequently withdraws abruptly from the market before the end of its contract. The latter event might be a consequence of financial failure.

The willingness of employees to transfer will depend on the balance of the offers from the incumbent provider and the new provider, and it certainly cannot be assumed that controllers will transfer.

For example, the transfer of services from NATS to ANS Ltd. at London Gatwick Airport has proved to be more difficult than expected. The incumbent provider, NATS, offered a sufficiently lucrative package for Gatwick ATCOs to work elsewhere that a reasonable proportion of them decided not to transfer to the new provider. This indicates that the slight inconvenience of working in a different location was outweighed by the benefits on offer from their current employer. ANS Ltd. was able to address this by recruiting ATCOs from the open market, such as those employed overseas and looking to move/return to the UK. This was feasible because the only language requirement was English and the market for English language controllers is bigger than for other languages (such as Norwegian).

In Norway the requirement to speak Norwegian will dramatically limit the pool of qualified ATCOs working outside Norway, and is unlikely that a 'market' for such controllers exists. Some relaxation of the Norwegian language requirement, by for example allowing the functions of a ground controller to be separated from the role of an ATCO, could help the situation.

When ACR gained its first TWR and APP contracts in Sweden, a number of controllers declined to transfer to the new provider. Regulatory intervention was required and LFV was obliged to lease ATCOs until ACR could recruit new personnel with appropriate licences.

The situation of an abrupt withdrawal of service (eg due to financial failure) is different, in that controllers would already be in place, and the problem becomes their supervision and their payment. Flysikring is the obvious company with the necessary competence to supervise the work of the controllers and assume legal responsibility for this. Flysikring would be entitled to payment for this role. Staff salaries and benefits would probably be the responsibility of either the Administrator of the failed company or the airport operator that let the contract.

It is therefore important to have contingency plans in place to handle these problems. The CAA (or possibly the MoTC) needs to ensure that it has the powers to require Flysikring to provide ATCOs under contract to a new provider should insufficient numbers of staff opt not to transfer to the new provider, or should the provider withdraw. Flysikring should be adequately compensated for this contract, but the CAA may need to ensure that no party is 'gaming' the situation: staff to seek to cause the opening of competition to fail and the *status quo* to continue; and the incoming ANS provider to make good any inadequacies in either its manpower planning or its employee remuneration offer. A time limit for such emergency support may be required.

6 Tender Process

In this section, we outline the high level process by which competition might be introduced into the Norwegian ANS market. As part of the process, and prior to launching each tender, we would anticipate a detailed assessment of the issues presented here and in particular to ensure compliance of each tender with Norwegian procurement law. The previous sections have discussed the various conditions that need to exist for the opening to competition to take place. As we consider that external interest in bidding to provide ANS services in Norway would be greatly increased by the separation of Flysikring from Avinor Airports, but recognise that this separation is likely to take some time to achieve, we begin by outlining how initial tenders might be organised. We then describe several aspects that will need to be covered in each tender (irrespective of how it is organised). We then discuss potential transition arrangements, timings of tenders and suggest the tender packages which might be taken to market first. Finally, we present an implementation plan to introduce competition.

6.1 Tender Organisation

6.1.1 Tenders prior to Separation of Flysikring from Avinor Airports

We have discussed in section 3.1 the benefit that institutional separation of Flysikring and Avinor Airports would have for the number of parties interested in bidding for ANS contracts in Norway. If it is decided that the two companies should be further separated, this process is likely to take at least a year from a decision by Parliament that this should happen. While this is happening, either the opening of the market is put on hold, or tenders are organised by a more independent body. We describe in this sub-section, how such an independent tender might be organised.

We note that if an independent tender process were successful, it might avoid the need to separate Flysikring from Avinor Airports, although we regard this as a sub-optimal solution.

We consider that the MoTC would be likely to be regarded by prospective bidders as a sufficiently independent organisation, even though it is the sponsoring ministry of Avinor AS. Running and organising a tender competition is a significant undertaking requiring both man-power and experience. While MoTC should therefore lead the tender process, it may well need support from other parties as its own resources, skill sets and information base may not be sufficient for this exercise. These resources might come from the CAA or be provided by an independent firm. For convenience, we refer to the provider of these services as the 'Project Manager', as we believe it important to distinguish between the roles and activities which must be undertaken by the MoTC itself and those which it may delegate to the Project Manager. We consider that it would not be appropriate for Avinor Airports to undertake these roles while it is still linked to Flysikring, although they both need to be involved in the process.

The role of the MoTC would be to initiate each tender; bring together the contributions of all relevant parties and oversee the evaluation of bids and the finalisation of the contract. It would also need to observe compliance with transition arrangements by all parties. The MoTC would need contributions from Avinor Airports, Flysikring and the CAA.

Avinor Airports would need to agree with the MoTC the locations and services to be tendered, notwithstanding the suggestions of this report. It would also need to decide on the level of service required (service and quality standards) and provide information that

bidders would need in order to prepare their tenders. As the recipient of the service, it should also indicate the evaluation and selection criteria that would be appropriate (although the MoTC would need to ensure that this did not create any bias towards Flysikring).

Flysikring itself should offer guidance on the appropriate boundaries between TWR and APP services and/or APP and ENR services as appropriate for each tender. It would also need to provide information on ATM/CNS systems and interfaces.

The CAA's role would be focused on the specification of its regulatory requirements, in terms of both safety and economic regulation. It would need to set out the safety and operational standards that have to be met, its licensing requirements and how it would assess bidders and monitor subsequent operations. The CAA should also advise on compliance with the Performance Scheme and the financial elements for the future contract. It might also become involved in the assessment of any bids from Flysikring and provide assurance of no cross-subsidy from non-competed activities.

The Project Manager would manage the whole tender process dealing with the significant logistical effort required to bring all elements together, structure the process in detail, manage stakeholder involvement, control document flow, and the many other activities set out in this section.

In principle, the NDF could organise its own tender (viz B3.7) prior to the separation of Flysikring and Avinor Airports since it is independent of both organisations. However, as it lacks ANS competence it would need some outside assistance in the drafting and evaluation of the tenders, and potentially the process it might follow could be similar to that described above. In practice, the NDF is likely to be an observer rather than the instigator of the initial tenders.

6.1.2 Subsequent Tenders

Once Flysikring is organisationally independent of Avinor Airports, the Airport company would organise tenders as it would see fit. The role of the Ministry would be much reduced if not eliminated, although the CAA would still have a part to play in the regulation of all safety aspects of the tender and vetting of bidders. It is essential, however, that Avinor Airports build up a competence in ANS to allow them to take on the management of the tender process.

6.2 Tender Phases

There will be a number of different phases for each tender, which we now discuss.

6.2.1 Preparation

The starting point will be the preparation of a very detailed plan for the tender. This would set out time-scales, identifying inputs required from the different stakeholders. There should also be discussions on whether the successful bidder should be required to provide a performance bond upon contract award to cover poor service delivery, early termination of the contract etc.

There would also be merit in having informal discussions with potential bidders to assess their appetite for bidding in Norway, their concerns and their attitudes to the specific tenders that might be launched.

For the first tenders run by the MoTC, there would be a number of additional aspects to this phase, including deciding which packages are to be tendered and the service contract

duration. A number of agreements between Norwegian stakeholders would also need to be put in place (eg ownership of Operations Manuals, NDF conditions for the specific airports being competed). At this time, selection criteria should be determined and an evaluation panel chosen.

6.2.2 Notification and Attraction of Bidders

The specialised nature of the services to be tendered in all probability means that potential bidders will have a good awareness of the pending tenders so that 'road shows' are unlikely to be needed. Public procurement rules and protocols will though need to be respected, but this and use of trade media and contacts should ensure that all interested parties are alerted to the opportunity.

6.2.3 Pre-qualification

There are a number of potential procurement process that could apply and should be investigated in full with respect to Norwegian procurement law, but we anticipate that the most applicable would be either an "open" or "restricted" process. The recommended initial step will be to request interested parties to simply register their interest by a specified date. After this deadline though no other organisations would be permitted to enter the competition. If too many parties expressed interest, there would need to be a second stage to reduce the number invited to tender to between four and six organisations. There would be a need to develop qualification criteria and then all interested parties would need to provide information to allow those criteria to be applied and produce a short list.

6.2.4 Bidding

A formal Invitation to Tender (ITT) will be sent to all short listed parties. This document would set out the rules of the tender, and describe the services being tendered, liaison arrangements and information which bidders will need to include in their submissions.

During this period, there may be a combination of bidder briefing sessions, management interviews and site visits. In many commercial tenders a Data Room (either real or electronic) containing all relevant data that may be shared with committed bidders is often established. However, given the scale of these ANS tenders, we consider that it is unlikely that a Data Room would be required for most tender packages.

6.2.5 Evaluation

Submitted bids will then be evaluated. It will be important to assess whether the financial proposition was realistic and sustainable, and whether there is a credible plan for the provision and training of ATCOs. Prior to separation of Flysikring and Avinor Airports, there should be a check that Flysikring was not cross-subsidising its bid: this is important for bidder confidence.

6.2.6 Closing of Transaction

In this phase, negotiations with the preferred bidder will be finalised, leading to contract signature. This activity would be primarily between the preferred bidder and Avinor Airports, with MoTC involvement largely as an observer.

6.2.7 Transition

After award of the contract, the new provider will need to make preparations for taking over the service. This activity would largely involve discussions between the new provider,

Flysikring and Avinor Airports, but there will need to be regular progress updates to the MoTC. There is a possibility of some intervention by the MoTC or the CAA if difficulties arose.

6.2.8 Take-over of Service Provision

On-going monitoring of service provision would be largely the responsibility of Avinor Airports and the CAA. Procedures would be needed to ensure any necessary maintenance of both physical and intellectual assets was being undertaken so that at the end on the contract, all assets were in an appropriate condition to be taken over by a subsequent service provider.

6.2.9 Review of Process

It will be important to appreciate the lessons learned during this process, so that the experience may be taken forward and later tenders improved. While described here as a separate phase, it may be more valuable to undertake brief reviews (or at least compile short notes) at the end of each phase. Workshops of relevant stakeholders should be held at the end of the Formal Tender Phase and the Transition Phase.

6.3 Tender Documentation and Information Provision

A range of documents will need to be generated during each tender. Some will be specific to the individual tender, while other documents will be more generic and may be used in several tenders.

Commercial information will concern the volume and nature of the traffic at each airport, the airport opening hours and the distribution of traffic within those hours. Historic traffic figures will allow bidders to make their own assessments of the scale of traffic risk that they are being asked to assume.

There will need to be a specification of the service required including the quality standards expected. This specification will also include the boundaries within which the service provider will operate and the interfaces it should have with, *inter alia*, airport operations staff, ground handlers and airlines, and the APP and/or ENR service provider.

Existing facilities to be used by the service provider will then need to be described in detail, with technical specifications given when appropriate. Ownership will be specified as well as responsibility for its maintenance and the care standards required. Arrangements for using the NATCON system will also need to be set out.

The ITT will also specify the financial arrangements, and specifically whether the payment for the service will come from the airport operator, from individual aircraft operators (through the TNC charge), or from recovery of a proportion of costs from en-route users through the CRCO, or some combination of these channels. There will need to be a clear specification of how the new service provider will be expected to carry traffic risk. The treatment at the end of the contract of any new assets which are acquired by the new provider will need to be set out.

The conditions of the contract will also need to be presented. Compliance with the safety directions and standards of the CAA will be a primary condition. Others will include an ability to modify facilities and/or procedures but with an obligation (if requested) to return them to original state at end of contract. Any updates to the Operations Manuals would become the property of the airport operator at the end of the contract. Additionally, at

some/most airports ATCOs may be required to have security clearances, and the presence of at least Norwegian speakers will also be necessary.

A draft contract should be provided, allowing bidders to make comments on it during the bidding phase. The contract will outline grounds for early termination of the contract by the airport operator, and the notice period required from a new service provider.

In addition to describing their plans for the provision of services, bidders will be required to set out their experience and suitability, their existing technical competence (as reflected in their regulatory approvals in other states), and their financial soundness and ability to withstand any shocks to their revenue and cost streams. A detailed financial plan will also be required.

6.4 Roles and Responsibilities

We summarise in Table 7 the roles and responsibility for the major activities for the initial tenders before Flysikring and Avinor Airports are separated. Subsequent tenders would then become the responsibility of Avinor Airports or the NDF for its airports. During the early tenders it will be important for the Ministry and the Project Manager to be seen to be leading the process and be the bidder-facing parties in Norway so that bidders are comfortable that the process is independent.

Activity	Primary Responsibility	Comments
Initiation of Tender	MoTC	This would include appointment of a Project Manager
Tender Planning	Project Manager	Detailed plan prepared after consultation with key stakeholders
Process Management	Project Manager	
Tender Specification	Project Manager	Role to co-ordinate major contributions of Avinor Airports, Flysikring, CAA and NDF. Will include technical, operational and commercial/financial aspects, asset ownership and interfaces, and military requirements
Tender Documentation	Project Manager	Inputs from all Norwegian stakeholders required
Evaluation process	Project Manager	Agreement of MoTC, Avinor Airports, CAA and possibly NDF on operational, safety and financial criteria. Evaluation panel to be chaired by MoTC
Bidder liaison	Project Manager	Will include leading briefing sessions and accompaniment on site visits, but with an increasingly important presence of Avinor Airports as process progresses
Staff/Union Briefings	MoTC, Avinor	A mix of communication channels, involving both Avinor Airports and Flysikring, the latter suitably briefed as a competing bidder
Contract Negotiation	Avinor Airports	Initial Draft Contract reviewed by MoTC, with continued MoTC oversight of process
Transition	Contracting Parties	Co-operation of Flysikring required, as well as on-going contributions from CAA and MoTC
Process Review	Project Manager	Co-ordination of views of all parties (including successful and failed bidders)

Table 7: Tender roles and responsibility

6.5 Liaison with Staff and Trade Unions

Throughout this process, it will be important to keep staff and trade unions informed. This task will need to be shared between the MoTC, as organiser of the initial tenders, and Avinor Airports, as the airport operator (customer) and organiser of later tenders. The role of Flysikring in these communications will have to be carefully defined, since it is its staff that will be most affected, but at the same time it cannot be given information by the tender organiser that is advantageous to its bid to retain contracts. Frequent and clear communications are necessary so that those most affected do not have to rely on rumours for their knowledge.

6.6 Transition Arrangements

The details of the transition arrangements that an incoming service provider proposes will have been assessed and agreed during the bidding and contracting phases. The new provider will need to gain more in-depth familiarisation with the operations involved and will need to have discussions with existing staff currently providing the services. Both staff and new provider will need to decide and agree on staff transfer. Potentially some work in

parallel may be required before a formal hand-over of service from Flysikring to the new provider.

It is assumed that Avinor Airports will be the primary facilitator of the transition, although there could be a need for either the MoTC and/or the CAA to step in if problems develop. It is also possible that Flysikring might need to provide temporary staff cover for the new provider should critical numbers of existing staff opt not to transfer to the new provider.

6.7 Time Lines

6.7.1 Contract Period

The length of the contract needs to be long enough to give an incoming provider the opportunity to make improvements and recover its bidding costs, while still sufficiently short to ensure that the cost of service provision remains competitive. An additional factor is that the longer the contract, the greater the stability for the staff of the new provider.

Tenders in other countries have typically been for five years, with options to extend once or twice for one or two years. The length of the Gatwick contract, however, is ten years, perhaps reflecting the additional complexity of the operation. Determination of the periods is largely a matter of balance, with no absolutely right or wrong answer within a particular range. In general, we suggest that as a starting point contracts should be for five years with two optional extensions each of a year. Local circumstances might lead to some variations in these durations, and there should also be consideration of the advantages and disadvantages of having different contracts ending at the same time (eg flexibility to offer different ANS combinations in future tenders, consequences for stakeholder resource requirements).

6.7.2 Individual Tenders

We present in Table 8 our estimates of the elapsed times of each of the individual phases of a tender, together with comments:

Phase	Elapsed Time (months)	Cumulative Elapsed Time (months)	Comments
Planning	3 – 6 months	3 – 6 months	Likely to be longest for first tender, and shorter thereafter
Notification	1 month	3 – 6 months	Assumed to commence before end of previous phase
Pre-qualification	2 – 3 months	5 – 9 months	Lower end of range if no need to screen down to short-list
Bidding	3 – 4 months	8 -13 months	Influenced by complexity of package
Evaluation	2 – 3 months	10 – 16 months	As above. Also influenced by quality of bids
Negotiation	1 – 2 months	11 – 18 months	
Transition	6 – 9 months	17 – 27 months	

Table 8: Typical anticipated tender time-scale

It may be seen that the overall time between starting a tender process until a new provider is in place could be between one and a half years and two and a quarter years. The high end of this range is more likely to be associated with a package such as D1.1 as new equipment, manpower and procedures will need to be put in place. As other tender packages involve the taking over of existing assets, in principle, they should be at the lower end of the range. In general, the elapsed time is likely to reduce as greater familiarity is gained with the tender process, and material developed for earlier tenders is re-used for later tenders.

While we have suggested that tenders, and particularly the early tenders, should not overlap in view of stakeholder resources, demands on these resources during the (last) transition phase of one tender may not be great, allowing the (first) planning phase of the next tender to start. However, this potential shortening of the period between tenders may not be of value if there is a desire/need to learn lessons from life operations of new contracts and new providers.

6.7.3 Overall Opening Process

We outlined in Part 1 a possible timeline for launching tenders, which we repeat below. This high level timeline will need to be elaborated in further detail, once decisions have been made on the aspects of the tender process described above.

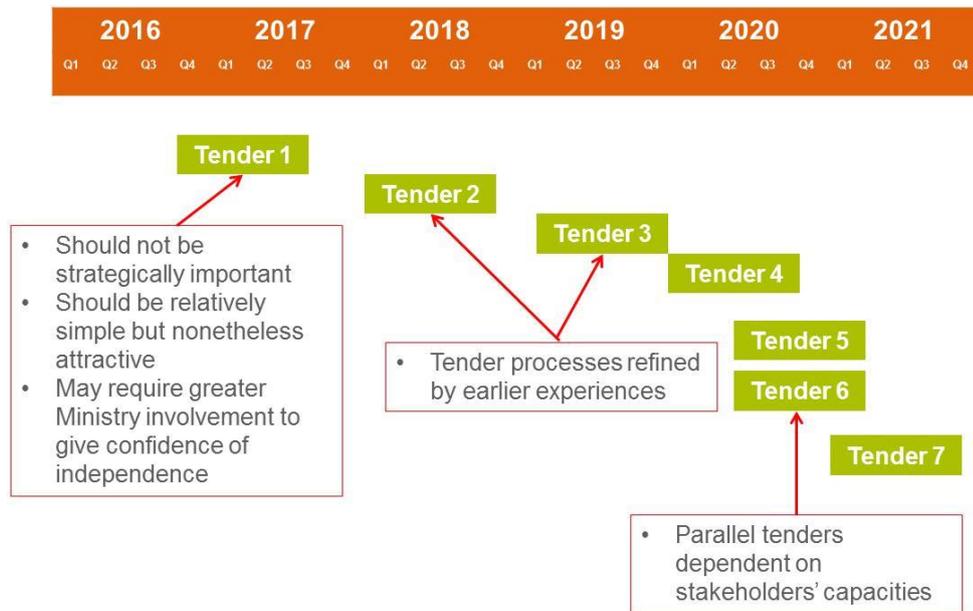


Figure 4: Possible timeline for Tenders

6.8 Potential Order of Tenders

Part 1 identified potential tender packages and suggested some criteria for the order in which they might be taken to market, namely that nothing strategic should go first, and that the early tenders should be as simple as possible. The success of the first tender is also crucial for ensuring sufficient market appetite for subsequent tenders and thus for the overall benefits from the opening of the market to competition. Finalising the structure of each tender will require more detailed consideration, including consultation with stakeholders. We have nevertheless come to an initial view on a potential order for tenders:

- B3.8: TWR and APP ATC at Kristiansand

- B3.4: TWR & APP ATC at Tromsø, Alta, Harstad Narvik, and Lakselv
- D1.1: Transition from AFIS to TWR ATC at Hammerfest and Brønnøysund
- B3.1: TWR and APP ATC at Bergen and Stord
- B3.2: TWR and APP ATC at Stavanger and Haugesund²⁰

Package B3.8 is suggested as the first tender as the services at Kristiansand are free-standing and neither are provided from another location nor provide services to another location. Additionally, the geographic location of Kristiansand in the south of the country and near Torp and Rygge, might act as some encouragement to the tenders for those two airports if the same organisation was to become the provider at all three airports having identified scale economies.

Package B3.4 is also put forward as an early tender as there are limited operational complexities associated with these services, which along with the airport grouping to ensure sufficient scale, means that it is likely to be attractive to the market. However B3.4 includes services at Harstad Narvik, which has been identified as of particular importance to the military, which advised that this airport should not be included in the first tender and further consultation with the military is recommended.

Package D1.1 is also proposed as one of the initial tenders as there is no transfer of staff involved since there are no ATCOs at either airport and the staff providing AFIS services are employees of Avinor Airports. However, while avoiding the complexities of staff transfer this transition would involve training, amendments of operational procedures, changes in ATM-systems and On-the-job training for new ATCOs at the unit. With the potential risks related to the entire transition, combined with the need to recruit or train staff to prepare for the contract, the implementation of this scenario is deemed more risky than existing stand-alone units.

If the ITT is silent on the ATC solution to be provided by bidders (ie TWR service or Remote Tower technology) it might also provide some impetus to Flysikring's own RT programme. It is assumed that APP service continues to be provided from Bodø ATCC. A longer contract (eg up to 10 years) should be considered for this tender to increase its attractiveness, given the significant complexity that will be associated with the upgrade from AFIS to ATC.

While we have suggested some period between the initial tenders in order to learn from experience, the nature of the three packages identified above may be sufficiently different that two might be tendered in reasonably close succession (or even over-lapped if stakeholder capacity were available).

Package B3.1 is likely to be a slightly more complicated package as not only are two airports involved, but also the smaller one (Stord) is owned and operated by the local municipality but receives APP from Bergen.

Package B3.2, for services at Stavanger and Haugesund, is also complicated by the centralisation of the approach service. The TWR service is required at both airports, and while APP service is provided from within the Stavanger ATCC, staff are within the same organisational unit providing TWR service. Hence, some solution would need to be found to solve the physical separation but institutional co-location issue.

²⁰ Package B3.2 has been updated in our final recommendation reflecting comments received during Part II. The Four TIA airports have now been removed.

Package B3.1 and B3.2 are both impacted by possible future airspace restructuring and greater centralisation of approach services in the West Coast TMA, which would necessitate revision of the proposed packages, either by including the centralised approach in a single tender with all dependent airports or limiting the scope to TWR services only.

Both Bergen and Stavanger are also Performance Scheme airports, which means that they have reasonable traffic volumes therefore their own (higher) TNC might cover the costs of service provision fully. In both these tenders traffic risk and detailed financial contractual arrangements may be different from Package B3.8 (Kristiansand) and other (later) B3 packages. However, as both airports are centres for the off-shore industry it may well be important to Norway for them to have efficient ANS provision based on competitive tendering.

Both Bergen and Stavanger have also been identified by the NDF as being of importance during times of peace, crisis and war.

6.9 Implementation Plan

Before all the above processes can take place, a number of other decisions and actions are required. We summarise the most important elements in Table 9 below, with an indication of the parties involved and potential time scales for the actions. The indicative timetable is set out with a view to awarding the first tenders by mid-2017. Whilst it is fairly ambitious we view it as achievable, given a prompt start.

Activity	Primary Responsibility	Time Scale	Comments
Preparation for Opening of Market	MoTC	Q1-Q2 2016	This may need to cover institutional reform of Flysikring and Avinor Airports (including scope to compete in other markets); responsibility and funding of national obligations (including ATCO training); and any other required legislative changes such as the provision of contingency powers (eg in the event of new provider failure)
Decision on Opening of Market	Norwegian Parliament	Q2-Q3 2016	The MoTC will present a white paper covering this topic to the parliament, who must approve any decisions on market opening and institutional reform.
Asset Transfer	Avinor AS	Q3-Q4 2016	While most airport ANS assets are already owned by Avinor Airports, Operations Manuals might also be transferred and arrangements for the use of NATCON will be necessary
Institutional Reform	MoTC	From Q4 2016	There are many aspects of the separation of Flysikring and Avinor Airports to be decided, including decisions on sponsoring ministries, internal organisation between competed and non-competed activities (and the associated economic regulation/oversight required), and the right to compete in other markets
Tender Initiation	MoTC	Q1 2017	For a tender to be 'taken to market' in Q1 2017, the preparation for this would ideally start immediately following the parliamentary decision.

Table 9: Implementation plan

7 Conclusions and Recommendations

In Part 1 of our report we concluded that introduction of competition into the supply of airport ANS services in Norway was feasible, and we identified how and where that competition might happen. In this Part 2 report, we have discussed five major areas where actions are needed in order to allow effective competition to be introduced. We have also set out some next steps needed to move the process forward.

7.1 Financial aspects

In a situation in which Flysikring is the sole national provider of ANS in Norway and is state-owned, it is a pragmatic arrangement that it bears the costs for all national obligations, and recovers those costs from airspace users as it sees fit, and is permitted to do so by European regulations. However, the proposed introduction of competition requires these arrangements to be re-visited.

In our view, some national obligations are fulfilled by Flysikring as by-products of its normal business; some impose trivial additional costs, while several are directly related to en-route service, which is to remain a non-competed activity of Flysikring. Hence, we recommend no change in several areas.

We make the following recommendations concerning cost recovery for national obligations:

- EUROCONTROL fees, Flight planning, AIM and AIS, ATFCM services, SAR, Airspace Design Competence and ATCO Training for en-route ATCOs should be included in the ENR (or oceanic) cost base.
- ENR customers should also be allocated a fair portion of costs related to Surveillance (and other CNS) data, Network Services, Aviation Weather Services and shared training costs for all ATCOs.
- Military ANS services should be financed directly by the military.
- Any other national obligations, including the new (latent) obligation for Flysikring to act as the provider of last resort, should be approached using the same principles, based on the need to ensure that Flysikring is not competitively disadvantaged and with a preference for “user pays” cost recovery, where applicable.

With the probable exception of Package A2.1, the tender for TWR services at Oslo Gardermoen Airport, we believe most packages will need to be subsidised. Consequently, we recommend continuation of the current model of the ANS provider being contracted and paid for by the airport operator, which would make good any shortfall of user charges with subsidies from commercial income. Any imposition of traffic risk sharing on the ANS provider would need to be done through contractual clauses.

Many of the packages involve the provision of APP services by the airport ANS provider. The current practice in Norway is to recover a proportion (50%) of these costs from the en-route traffic base, and we recommend that this should continue (subject to any review of the proportional split). The airport operator should claim the monies due from en-route users via Flysikring (as the en-route provider) and the CRCO. Principles will need to be put in place to handle differences between the ‘determined’ costs used originally to set the ENR unit rate for the Reference Period and the actual annual costs of the new APP provider. Again, traffic risk sharing clauses may need to be part of the contract between the airport operator and the airport ANS provider.

A further complication arises at packages involving any of the four Performance Scheme airports, in view of the uniform TNC charge that applies at them. With the provider of terminal services potentially changing during a Reference Period, the need for adjustments in the distribution of revenues between Norwegian stakeholders to compensate for different costs will need to be assessed. Traffic risk sharing and future rate determination will also need to be carefully considered.

We advise that the MoTC or CAA opens a discussion with the PRB to ensure regulatory compliance and also consider the possible future exemption of airports from the Performance Scheme.

7.2 Institutional reform

There is a need to further separate Flysikring from Avinor Airports: there is a risk that potential bidders will be discouraged from participating in a competitive tender in which the company requiring the service is part of the same company as one of the other bidders. While their activities within the Avinor Group are already separately defined and with separate operational organisations, we recommend full separation. Many central functions however are shared and new arrangements for these services will be required. There is a need also to ensure that formal contracts do exist between Flysikring and individual Avinor airports for the provision of airport ANS services.

Although there have been suggestions that the two companies should be responsible to separate ministries, we see no strong arguments for this, provided that the MoTC considers that it could handle any conflicts of interest that might arise. We certainly consider that there is merit in the MoTC continuing for the medium term to oversee the opening of the ANS market and all the measures necessary to support this. In four or five years' time, the position may be reviewed with one of the companies becoming the responsibility of a separate ministry.

Even though there is already some separation between Flysikring and Avinor Airports, full separation is likely to take more than a year to achieve. In the meantime, more detailed oversight by the Economic Regulator will be necessary to allow the first competitive tenders to be launched.

There must be further separation of competed and non-competed activities within Flysikring, to prevent cross-subsidy from the latter to the former. Our recommended approach is to establish within Flysikring two subsidiary companies, one regulated and one unregulated. If this is seen not to be working effectively, then full separation into two corporate entities would still be available for adoption at a later time.

Subject to resource availability, the internal re-organisation of Flysikring could run in parallel with its separation from Avinor Airports.

The Economic Regulator will play a more important role in a market opened for competition. It may be necessary to expand the powers of the CAA and strengthen its resources.

7.3 Asset issues

In the main, most assets are already with the most appropriate party (viz Avinor Airports), so that the issues here are relatively minor. We recommend that the Intellectual Property rights to the local ANS Operations Manuals also be transferred to Avinor Airports although responsibility for maintaining and updating them would remain with the ANS provider.

Arrangements also need to be made to allow access to the local infrastructure, equipment and manuals as well as some centralised systems such as the surveillance and flight data systems. Use of an access payment appears to be the most sensible approach. The MoTC or CAA may need to impose on Flysikring an obligation to provide appropriate access and to arbitrate a reasonable price – ideally paid by the airport operator.

During the course of the ANS contract, new or replacement assets might need to be acquired and it is important to clarify the responsibilities between the parties in the airport-ANS provider contract. There should also be legal provision to protect the interests of all parties so that the asset owner will be compensated for any excessive wear and tear. To further reinforce this protection, insurance policies should be in place in the event of failure or mis-use of assets.

7.4 People issues

Staff are critical to the provision of ANS. In Norway salaries are high by international standards and staff in state enterprises such as Flysikring enjoy a Defined Benefit pension. Thus, new ANS providers will in general wish to employ the staff currently providing ANS services but would wish to leave behind their costs of employment.

Whenever services are taken over, staff have certain rights under European and Norwegian law and as a result of collective and individual employment agreements. It may be possible for a new ANS provider to vary the terms of employment, but such variation risks staff not transferring to the new provider.

New ANS providers will need to offer new pension arrangements to staff, and these are likely to be in a Defined Contribution scheme. Former Flysikring employees will have protection for the entitlements they have built up. These transferring employees should be deemed to be leavers from the scheme and the liability they have built up would then be the responsibility of the state. It is currently not clear if transferring staff would be classified in this way.

To reduce its competitive disadvantage against new providers, Flysikring may well seek to move from the current Defined Benefit pension scheme to a Defined Contributions scheme. Should it succeed in its negotiations with the unions, we recommend that the MoTC takes on the burden of the liability for the Defined Benefit entitlements accrued up to the time of the change in schemes. Changing to a Defined Contribution scheme will be a challenge for Flysikring and in the case that it is unable to change to a Defined Contribution scheme we recommend that the MoTC evaluates the long run impact of the current pension costs on Flysikring's ability to compete in the market and consider appropriate measures to support a level playing field.

Responsibility for and funding of ATCO and ATSEP training will need to be assigned and agreed. The CAA will need to have powers to require Flysikring to provide ATCOs should an incoming provider be unable to do so, or if a provider should fail and have to withdraw from the market.

7.5 Tender process

Consideration of the many steps necessary to hold a competitive tender suggests that each tender might take at least one and a half years from launch to hand-over to a new provider. We have argued in Part 1 that there are merits in phasing the opening of the

market so that at the beginning of the process it is possible to learn from the experience of the first tenders and improve subsequent ones.

In view of the time that it will take to separate Flysikring from Avinor Airports, we recommend that opening of the market starts with a tender process led by the MoTC with the support of an independent 'Project Manager' rather than Avinor Airports

The phases of each tender will involve considerable effort in the preparation, attraction of bidders, pre-qualification, bidding, evaluation, transition, take-over and review. It is important that throughout the tender process the staff and trade unions are kept well informed and that the details of transition arrangements are provided.

Individual tenders may take between one and a half years and two and a quarter years depending on the complexity of the tender package but this is likely to reduce as greater familiarity is gained. As a starting point we recommend a service contract period of five years with two optional extensions each of a year so that the incoming provider can recover its bidding costs. The potential order for the tenders we suggest is:

- B3.8: TWR and APP ATC at Kristiansand
- B3.4: TWR & APP ATC at Tromsø, Alta, Harstad Narvik, and Lakselv
- D1.1: Transition from AFIS to TWR ATC at Hammerfest and Brønnøysund
- B3.1: TWR and APP ATC at Bergen and Stord
- B3.2: TWR and APP ATC at Stavanger and Haugesund²¹

The above order and packages would need to be verified with the CAA, military and Avinor Airports before being confirmed. The MoTC or project manager may also want to undertake some preliminary and unofficial market screening with potential bidders to ensure that the first tender is considered sufficiently attractive to undertake the cost associated with entry into a new market.

7.6 Conclusions

While there are many tasks that need to be accomplished to open the Norwegian airport ANS market to competition, none represents an insurmountable barrier to this happening.

²¹ Package B3.2 has been updated in our final recommendation reflecting comments received during Part II. The Four TIA airports have now been removed.

A Models for cost allocation and recovery of approach services

A.1 Cost allocation

A range of different strategies are applied across Europe to allocate approach costs and the current model applied in Norway is considered reasonable. A number of potential alternative arrangements for allocation of approach costs are presented below.

Option	Description	Comment
1. Fixed percentage allocation	A fixed proportion of all approach costs is allocated to the en-route cost base.	This model is currently applied by Flysikring which allocates 50% of approach costs to en-route.
2. Fixed percentage allocation by airport (or airport type)	The proportion of approach costs allocated to en-route may vary by airport (or airport type) based on the specific approach procedures and operational boundaries.	This model is currently used in Sweden where several levels of allocation are applied.
3. Capped cost allocation	There is a nominal cap on the amount of approach costs at each airport that can be allocated to the en-route cost base.	The upper limit of this figure would be approach costs currently allocated by Flysikring. This cap could be periodically reviewed in the light of changes in the tower-approach cost base.
4. Capped percentage allocation	A percentage cap is applied to all airport ANS costs where costs cover both tower and approach services.	This avoids the incentive to over-allocate to approach in order to increase the allocation to the en-route cost base.

Table 10: Approach cost allocation options

Standard practice for allocation of approach costs is based on fixed percentage allocation principles (options 1 and 2). This strategy is currently applied in Norway and represents a fair and transparent way to allocate costs. However fixed percentage allocation options may need to be combined with regulation and/or monitoring of the allocation of shared costs between TWR and APP to avoid over-allocation to APP, which would increase the allocation of costs to the en-route cost base. The current allocation of TWR costs (60%) and APP costs (40%) provides a baseline.

A more effective way of mitigating the incentive to over-allocate to APP in options 1 and 2 is to combine them with an allocation cap (ie options 3 and 4). The cost cap may be used either solely for monitoring purposes or to dictate the total amount allocated. Using a nominal cap (option 3) to dictate the total amount allocated aligns with the en-route charging regulations that are based on fixed nominal costs to be recovered from airspace users.

We consider that a fixed percentage allocation for all airports or for each discrete airport type (options 1 or 2) be applied as the basis for approach cost allocation combined with a cost cap (option 3).

A.2 Cost recovery

Having determined the appropriate allocation, it is then necessary to consider how these will be recovered in the context of the Performance Scheme and Charging Regulation²².

²² Commission regulation (EC) No 390/2013 of 3 May 2013, EUROCONTROL

Costs allocated to the airport cost base may be recovered (at least in part) via the TNC charge at the airport as shown in Figure 5

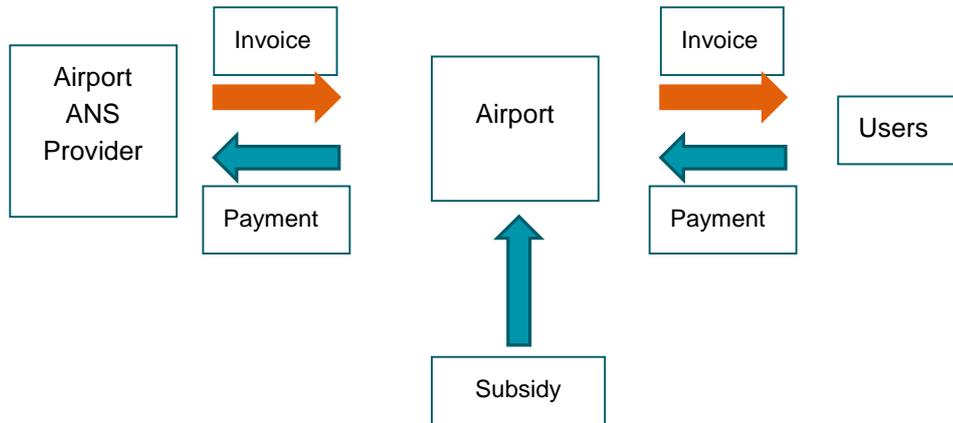


Figure 5: Recovery of airport cost base

However, for those costs allocated to the en-route cost base, a second and different recovery mechanism is required. We consider that a proportion of APP costs will continue to be recovered from the en-route traffic base since overall the airport traffic base cannot be recompensed solely through the TNC and requires some subsidy: while opening airport ANS to competition may reduce costs, reductions are unlikely to be sufficient to remove the need for subsidy.

A number of alternatives for the flow of revenues are shown in Figure 6. The Central Route Charges Office (CRCO) bills and collects en-route charges in Norway and will therefore also collect any approach fees allocated to the en-route cost base.

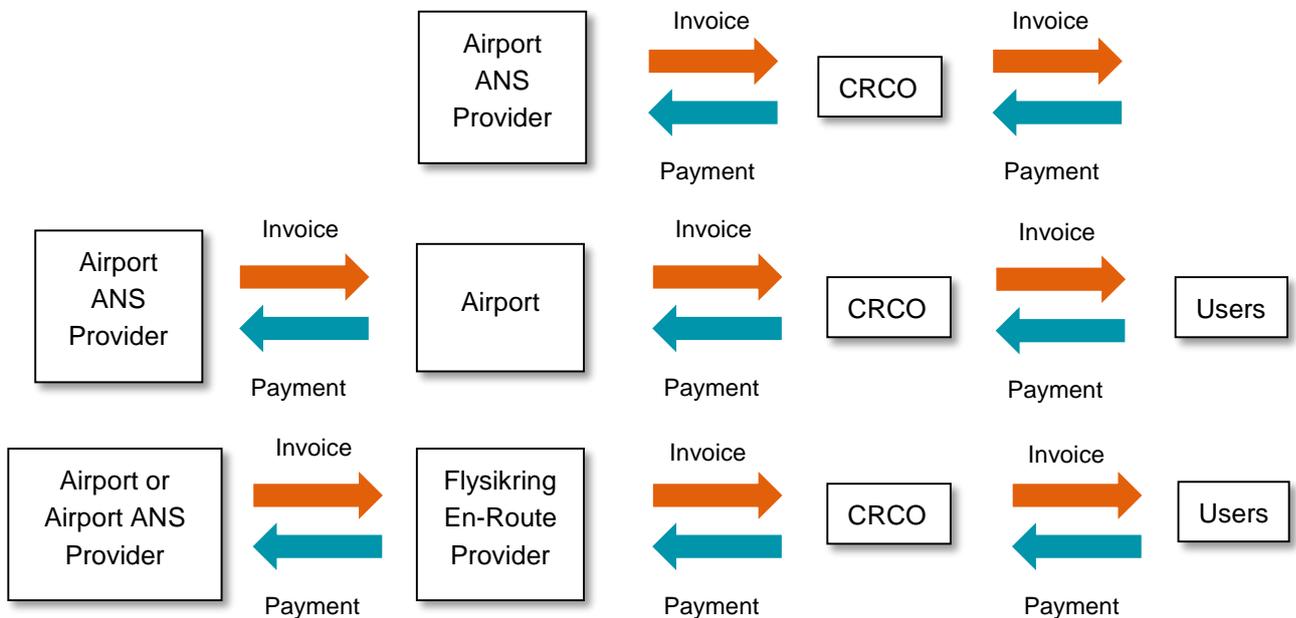


Figure 6: Options for recovery of en-route cost base

The following table sets out a range of possible options for approach cost recovery based on provider compensation and risk bearing arrangements.

Recovery via en-route cost base?	APP costs subject to traffic risk sharing?	APP revenue recipient	Risk bearing
Approach costs not included in en-route cost base	Not applicable		
Approach costs included in en-route cost base	Subject to traffic risk sharing	Revenue compensated directly to TWR/APP ANS provider	Revenue risk borne by TWR/APP provider
		Revenue paid directly to the airport operator	Risk borne by the airport operator
		Fixed revenue paid to the airport operator or TWR/APP ANS provider, en-route provider retains all en-route charges	Risk borne by the en-route provider
	Not subject to traffic risk sharing	Revenue compensated directly to TWR/APP ANS provider	Full recovery of determined costs so no revenue risk
		Revenue paid to the airport operator	

Table 11: Approach cost recovery options

A.2.1 Risk Sharing

Currently approach costs are included in the en-route cost base and subject to traffic risk sharing. In the context of competition the default option would therefore be to maintain traffic risk sharing on the approach costs allocated to the en-route cost base. However the risk will be calculated based on the deviation of en-route traffic from planned meaning that it will not necessarily be reflective of the traffic changes experienced by the TWR/APP provider or airport. Risk bearing by the TWR/APP ANS provider would also add greater complexity to the tendering process and contracts. We therefore recommend that if en-route APP costs are subject to traffic risk sharing the risk should be borne by either the airport operator or the en-route provider.

The current Performance Scheme and Charging Regulations do not provide an explicit route for exempting such costs from traffic risk sharing. We are not aware of any cases in which an exemption has been applied: in Sweden approach costs related to ACR are subject to traffic risk sharing. However we believe that exemption is preferable, notably as we recommend that risk should be borne by either the airport operator or en-route provider. Given that it is standard practice to allocate a portion of approach costs to the en-route cost base, where airport ANS is provided separately to en-route there is an argument that these costs should not be subject to risk sharing calculated based on en-route traffic trends.

Regardless of whether traffic risk sharing is applied the contract between the new ANS provider and airport operator is simplest where the airport operator interfaces with the en-route provider regarding the recovery of approach costs from the en-route cost base.

We therefore recommend that the new TWR/APP provider has only a single contractual arrangement with the airport in question and that the airport operator interfaces with the en-route provider and collects any costs allocated to the en-route cost base. We understand that under the current regulation traffic risk will be borne on approach costs and in this case recommend that the en-route provider bears the revenue risk as it is best placed to plan for and absorb these risks, which are calculated as part of the overall en-

route traffic risk adjustments. The risk could also be borne by the airport operator and there is an argument that risk bearing by the en-route provider may place unfair risk on the en-route provider and this decision should be assessed by the CAA in their role as the Economic Regulator.

However we believe that it is preferable that approach costs allocated to the en-route cost base are exempt from traffic risk sharing and therefore encourage the MoTC and CAA to open a dialogue with the PRB (Performance Review Body) on this topic.

A.2.2 Setting and recovering the cost base

In addition to traffic risk sharing the regulations governing en-route charging specify how charges in each year are calculated and how risk related reimbursements are made.

For each five year regulatory period, en-route planned ('determined') costs and forecast traffic are fixed in the Performance Plan. The basic premise is the unit charge for each period is set by dividing determined costs by forecast traffic. If traffic is as planned revenues are equal to determined costs. The revenue loss/gain from lower/higher traffic than planned is shared with the airspace users based on the traffic risk formulae defined in the regulation. The inclusion of approach costs in the en-route cost base implies these costs will need to be included in the setting of the Performance Plan and the associated revenues received in each year will be based on the determined costs rather than the actual approach costs incurred in the year.

All approach costs included in the en-route determined cost base are included in the calculation of the unit rate and traffic risk is, as noted above, borne on all of these costs and calculated based on the deviation of en-route service units from planned. There is also a timing element to traffic risk reimbursement: a traffic risk sharing adjustment due to lower than planned traffic in Year N is carried over to Year N+2 and may be recovered over a number of periods if traffic is again lower than planned in Year N+2.

The timing for revenue reimbursement provides additional justification for excluding the TWR/APP provider from the approach cost recovery mechanism as the decisions on airport tendering can then be made with consideration of the regulatory cycle. The role of the provider in place at the time of Performance Plan definition should be limited to the provision of forecast costs consistent with European-wide targets to be included in the en-route determined cost base and Performance Plan.