



Luftfartstilsynet
CIVIL AVIATION AUTHORITY - NORWAY

NATIONAL PERFORMANCE PLAN FOR AIR NAVIGATION SERVICES 2012-2014



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| Name | Position | Date | Signature |
|------------------|---|-------------------------|------------------|
| Ottar Ostnes, | Director General Ministry of Transport and Communications Department of Civil Aviation, Postal Services and Telecommunications | 09.04.2012 17/2-2012 | Ottar Ostnes |
| Heine Richardsen | Head of Civil aviation authority, Norway. | 09.01.2012 | Heine Richardsen |

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Annexes:

- A. Reporting Tables 1 and 2 – consolidation all entities. Nov. 2011.
- B. Public consultation material
 - List of participants and copy of the invitations (only in Norwegian)
 - Letter from NHO-Luftfart
 - Letter from SAS
 - Letter from IATA
 - Letter from Avinor A/S
- C. Economic trends for Norway and abroad. "Economic Survey" from Statistics Norway published 08.12.2011.
- D. Assessment of the cost of capital for Avinor A/S. Final report from Deloitte A/S.
- E. Annotated template tables for the preparation of the performance plans for RP1. (The tables in the plan are not presented in the correct order. The numbers on the tables are in accordance with the number on the attached Excel tables.)

1 – Introduction

1.1 The situation

Commission Regulation (EU) No 691/2010 laying down a Performance Scheme (The performance Regulation) requires all EU Member States (including EEA) to develop National Performance Plans, setting out their performance targets for the near future. This document provides the National Performance Plan (NPP) for Norway for the first reference period (RP1) of the performance scheme from 01.01.2012 until 31.12.2014.

This plan has been prepared at a national level, and refers to performance within Norwegian airspace, including Bodø OFIR in the ICAO NAT Region.

The Norwegian Civil Aviation Authority; Luftfartstilsynet, is responsible for drawing up the performance plan.

The performance plan covers the performance of:

- **Avinor A/S.** Avinor A/S is the national certified air navigation service provider (ANSP) designated by the Norwegian government to deliver air navigation services for en-route and TMA air traffic within Norwegian airspace.
- **Meteorologisk institutt.** Meteorologisk institutt is the national certified provider of meteorological service designated by the Norwegian government as meteorological service provider within the Norwegian airspace.
- **Luftfartstilsynet.** Luftfartstilsynet is the national Civil Aviation Authority of Norway and also the appointed national supervisory authority (NSA).

The Norwegian performance plan includes the services provided in en-route airspace and in terminal airspace at Oslo airport, Gardermoen, Stavanger airport, Sola, Bergen airport, Flesland and Trondheim airport, Værnes.

1.2 Overall assumptions for Reference Period 1

In this section the following overall assumptions is described:

- The economic situation in Norway.
 - A general description of the economic situation in Norway.
 - GDP forecast
 - Inflation forecast
 - Traffic forecast
- Status of aviation safety and Aviation State Safety program
- Institutional context and governance

1.2.1 The general economic situation in Norway.

From 2008 to 2009 Norway experienced, like other European countries, a fall in the net gross domestic product. However, the socio-economic development following the financial crises has not affected Norway to the same extent as experienced elsewhere in Europe. Low unemployment, low interest rates compared to normal domestic standards and strong governmental finances has maintained a high domestic demand.

| | 2009A | 2010A | 2011F | 2012F | 2013F | 2014F |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| GDP forecast * | 2.380.851 | 2.505.076 | 2,738.047 | 2,874.973 | 2,995.957 | 3,127.546 |
| GDP Growth | -1.4 | 5.2 | 9.3 | 5.0 | 4.2 | 4.4 |
| Inflation forecast** | | 1.7 | 1.4 | 1.4 | 1.6 | 1.9 |
| Traffic forecast*** | 1495 | 1583 | 1701 | 1754 | 1798 | 1843 |

The general economic situation in Norway.

- * : IMF, Gross domestic product, current prices
 ** : Statistics Norway – SSB. Inflation figures do not differ significantly from the corresponding figures published by the IMF. Statistics Norway has first hand knowledge of national conditions and has a good credibility.

| | 2011 | 2012 | 2013 | 2014 |
|---------------|--------|-------|-------|-------|
| Inflation SSB | 1,4 %* | 1,4 % | 1,6 % | 1,9 % |
| Inflation IMF | 1,8 % | 2,2 % | 2,5 % | 2,5 % |

See annex C to this plan: Economic trends for Norway and abroad. "Economic Survey" from Statistics Norway published 08.12.2011. This article provides a thorough assessment of the economic prospects for Norway, and supports our opinion that forecasts for inflation from the IMF is too high.

* Inflation forecast 2011 is the SSB forecast from Sept. 2011. Inflation forecasts for 2012, 2013 and 2014 are the SSB forecast from Des. 2011.

- *** : 2011 – Statfor Short –Term Forecast of Service units September 2011.
 2012 – Statfor Short –Term Forecast of Service units September 2011
 2013 – 2014 -Norwegian authorities believe that the growth in air traffic will increase more than Statfor medium-May-2011 estimates. This is based on input from the major airspace users and Avinor A/S who sees a higher growth than the Statfor figures provides for. In particular, we have seen an increase in the number of flights through Norwegian airspace. This is due to the fact that use of Russian airspace is liberalized, and the increased focus from operators in the Middle East. There is reason to believe that this trend will continue and lead to further increases in traffic.

The following table shows the development in overflying traffic (movements). Overflying traffic has in general the potential to create a high volume of en-route service units due to the fact that the operating airplanes are heavier (MTOW) than domestic operating planes.

| | | |
|------|-------|-------|
| 2007 | 59479 | |
| 2008 | 60478 | 1,68% |
| 2009 | 61397 | 1,52% |
| 2010 | 64787 | 5,52% |
| 2011 | 65761 | 1,50% |

1.2.2 Status of aviation safety and aviation State Safety Program

CAA Norway has developed a plan for the implementation of State Safety Program. The performance scheme will be an important tool in the implementation of the Norwegian State Safety Program.

1.2.3 Institutional context and governance

The overarching objective for the air transportation sector in Norway is to ensure a safe air transport network allowing for sustained economic growth throughout the whole country. The institutional context for the provision of ANS in Norway, as covered by this plan, is as follows:

- **The Ministry of Transport and Communications (Samferdselsdepartementet).**

The Ministry of Transport and communications has the overall responsibility for developing regulations in all areas related to civil aviation. The Ministry of Transport and Communications maintains the State's interests as the sole owner of Avinor A/S (Ltd.).

- **The Civil Aviation Authority (Luftfartstilsynet)**

The Civil Aviation Authority - Norway (CAA) is an independent administrative body under the Ministry of Transport with the administrative authority in Norwegian civil aviation. Its main task is to contribute to increased safety in civil aviation. The CAA develop and implements rules and regulations, certifies and oversees among others air navigation service providers, airlines, technical organizations, aviation training schools, aircraft, licence holders and airports. The Ministry of Transport has appointed Norwegian CAA as National Supervisory Authority (NSA).

The department of Aerodromes and ANS of the CAA is responsible for the supervision of ATM/ANS. In cooperation with the Ministry of Transport, the department is responsible for developing regulations for providers of ANS. The department also regulates and performs safety oversight and audits of organizations and competences involved in the provision of such services.

- **Avinor A/S(Ltd.)**

Avinor A/S (Ltd.) is a 100% state-owned private limited company. The company has approximately 2,700 employees and is responsible for the planning, establishment and operation of airports and air navigation systems in the entire country.

The Air Navigation Services division is responsible for the provision of air traffic services in Norwegian airspace, including designated airspace over Norway and the Barents Sea. Avinor A/S also provides air navigation services at 46 aerodromes, including the main airport, Oslo Airport Gardermoen.

- **Meteorologisk institutt. (The Norwegian Meteorological Institute)**

The Norwegian Meteorological Institute is a state administrative body, under the Ministry of Education and Research, that provides meteorological services to both Military and Civil aviation in airspace under the Norwegian responsibility. The Norwegian Meteorological Institute has approximately 440 employees. Approximately 70 employees are engaged within the provision of meteorological services for the aviation sector.

- The Meteorological Institute has established three meteorological watch offices which are responsible for the continuous monitoring of the meteorological conditions in Norwegian Flight Information Regions. The Ministry of Transport has designated The Norwegian Meteorological Institute as the meteorological service provider in all airspace under Norwegian responsibility. The designation is valid until 2012, but will be prolonged until 2014.

1.3 Stakeholder consultation

The following consultation meetings have taken place as part of the developing process:

- There have been four consultations with stakeholders in “the national reference group”: 14 January 2010, 25 January 2011, 6 May 2011 and 20 June 2011. The reference group consists of representatives of airspace users; the largest airline companies, the Ministry of Transport and Communications and the Military Authority. IATA was also invited to attend the meetings, but declined and opted to give a written input to the process. Information was provided to participants three weeks in advance. A list of participants and copies of the invitations; see annex B.(Only in Norwegian).
- There have been two consultation meetings with representatives from relevant trade unions on 18 March 2010 and 10 May 2011.
- There has been a written consultation with the above-mentioned groups with a response deadline of 20 March 2011.

The consultation meetings have focused on the regulation and the process with developing a national performance plan. The main interest has been linked to the efforts to establish national performance targets, and a number of suggestions have been received; mainly related to targets for capacity and targets for cost-efficiency.

Capacity: Avinor A/S believe that the proposed targets for capacity are too demanding. To maintain the current level of delays it will require greater financial resources than the performance plan allows. ANSP is particularly concerned about the situation at the Oslo ACC. The Norwegian authorities agrees that it will be difficult to meet the proposed targets, but believe that the efforts made to improve the capacity of the airspace, combined with the increased availability of air traffic controllers, will make it possible to reach a level comparable to the reference values proposed by Eurocontrol

Traffic: In the first draft the Norwegian authorities proposed to use Statfor medium traffic forecasts. The airspace users stated that they believed that these forecasts were too conservative, and that traffic in Norway will increase far more than Statfor estimates. The plan was revised and traffic figures for 2013 and 2014 were adjusted slightly upwards. Avinor A/S also agreed that there was room for a moderate upward adjustment, despite the fact that this will increase the company's risk.

Cost-efficiency: All stakeholders representing the airspace users has raised questions regarding the calculation of capital costs proposed in the plan sent out in advance of the last consultation. They believe that the risk premium added to the calculation is too high in relation to the actual risk, and the fact that the capital base is adjusted sharply compared to previous years. The return on equity is at a much higher level in Norway than all other comparable countries.

After the first assessment from PRB the Ministry of Transport and Communications hired Deloitte A/S to assess the appropriate level of equity returns. Although Deloitte A/S has produced a WACC that is lower than the one used in the first proposal, the airspace users still considers that the level on return of equity is too high. The Norwegian authorities have accepted the conclusions from the Deloitte-report to estimate the return on equity in the national performance plan.

2. - Performance targets at national level

2.1 Performance targets and alert thresholds.

Table 3 gives an overview of the targets and threshold values set for the years 2012-2014; reference period 1 (RP1), - in the Norwegian performance plan.

| KPA | KPI | National/FAB targets | | | National thresholds |
|---------------------|--|------------------------|------------------------|------------------------|--|
| | | 2012 | 2013 | 2014 | |
| (a) Safety | Safety maturity - regulator. | Managing and measuring | Managing and measuring | Continuous improvement | |
| | Overall score | | | | |
| (b) Capacity | En-route ATFM delay (minutes per flight) | 0.04 | 0.04 | 0.05 | A deviation over a calendar year by at least 10% of the actual traffic recorded by the PRB versus the traffic forecasts. |
| (c) Environment | | | | | |
| (d) Cost-efficiency | Determined en-route unit rate (2009 prices in national currency) | 481,5 | 465,8 | 445,0 | A deviation over a calendar year by at least 10% of the actual traffic recorded by the PRB versus the traffic forecasts |

Table 3: Presentation of the national targets and thresholds for RP1

a) Safety

Introduction

There are no EU wide targets for the safety area in the first reference period, it will, however be important to accumulate knowledge and experience during the first reference period to allow for a proper target setting in RP 2. The methodology used in the performance scheme for the safety area has relevance beyond the implementation of the EU performance scheme, ie in the implementation of the ICAO State Safety Program (SSP) and the European Aviation Safety Program (EASP). The Performance Scheme therefore in principle enables the ATM sector to be a spearhead in the implementation of SSP and EASP.

The Norwegian CAA has therefore decided to take maximum advantage of the performance scheme in the area of safety during RP 1 for three reasons:

1. It will facilitate a structured monitoring of the safety performance of the ATM industry in Norway
2. It will form a platform for a proper target setting in the safety area in RP 2
3. It will pave the way for the implementation of the SSP and EASP

Concept

Populating a composite index or a limited set of safety performance indicators with reliable, consistent and high-quality data is key to perform monitoring the Norwegian ATM system safety performance and its contribution to aviation safety overall. However, if not adequately done, the introduction of safety performance indicators and targets may have an impact on efforts to promote, implement and support just culture. Norway will base its efforts within the safety area on the 3rd SAFREP TF Report to the Provisional Council of Eurocontrol.

Recognizing that parts of the methodology is under development, and for the time being, immature, our main focus during the 1st reference period will be the monitoring and review of leading and lagging indicators as described below. The leading indicators are mainly founded on the safety maturity framework for the Regulator and the Air Navigation Service Provider (ANSP) referred to as **effectiveness of safety management** as described in the amendment of (EU) no 691/2010. The questionnaire used will be in accordance with the AMC GM to the amended 691/2010.

The lagging indicators are centred on the number of reported incidents in various categories. A comprehensive effort in this area is considered paramount for the development of targets for the next reference period.

Norway intends to apply severity classification based on the revised Eurocontrol **Risk Analysis Tool** methodology from 01.01.2012.

We will further report the level of presence and corresponding level of absence of **just culture** based on the questionnaire in the AMC GM to the amended (EU) no 691/2007.

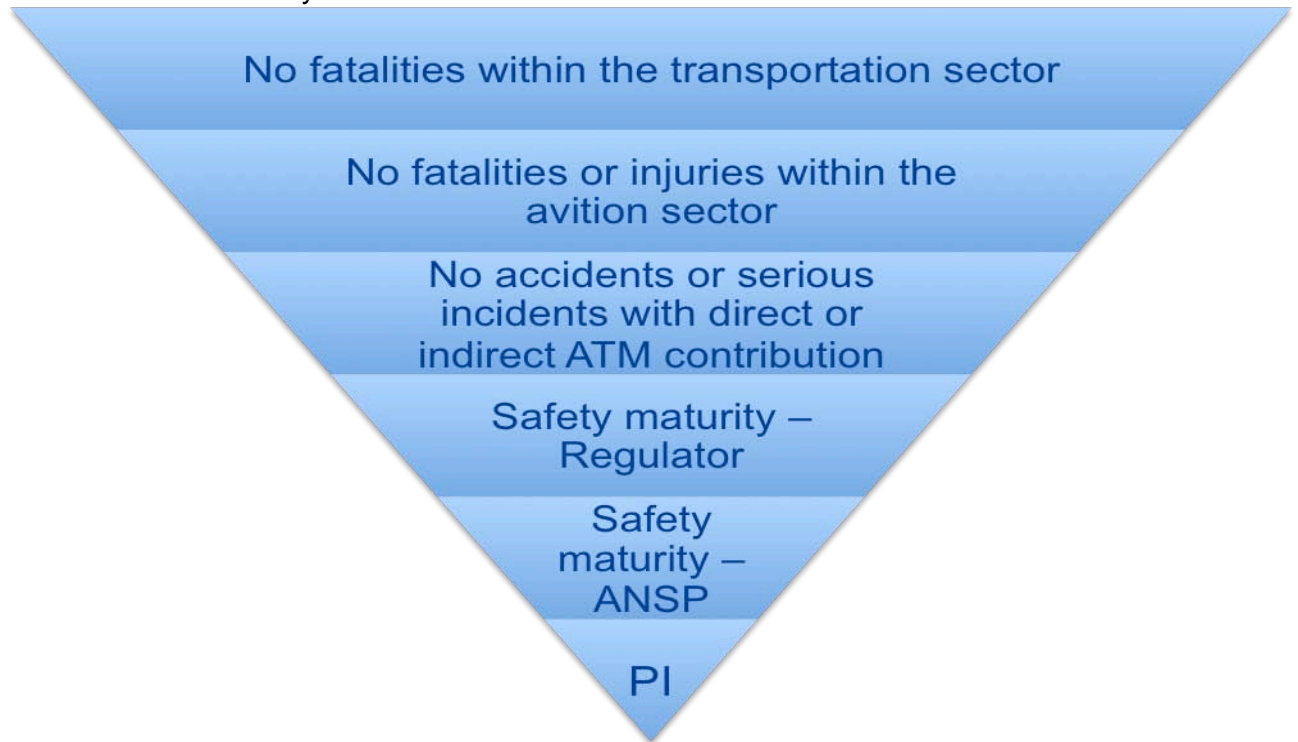
It is also important to ensure that the ATM industry contributes to the overall safety performance of the Norwegian Aviation System and we will therefore develop a link between the vision for safety performance in the transportation sector, the overall vision for the aviation sector with an overall safety goal for the ATM industry and the target setting and monitoring of a set of leading and lagging indicators.

We therefore endeavour to establish a hierarchy of objectives based upon:

- a) the vision for the safety performance of the transportation sector, followed by
- b) the overall vision for the safety performance of the aviation sector,
- c) an overall safety goal for the ATM industry – No accidents or serious incidents with direct or indirect ATM contribution,
- d) Effectiveness of safety management for the regulator (a target will be defined)
- e) Effectiveness of safety management for the ANSP (monitoring)
- f) The monitoring of a set of lagging performance indicators.
- g) Application of the Risk Analysis Tool methodology to the reporting of a set on indicators
- h) The reporting of the presence and corresponding level of absence of Just Culture

The performance plan will only reflect the items c-h as listed above.

The described hierarchy is visualised below:



Methodology

To ensure that safety levels are maintained or improved, systematic safety monitoring processes should evaluate achieved safety performance in all safety related operational activities. Safety performance indicators are used to analyse trends and detect unwanted degradation of safety levels, supporting the development of effective improvement plans. The SAFREP TF has identified two main categories of performance indicators for consideration in the development of KPIs:

Lagging indicators, which measure events that have happened, i.e safety occurrences, such as accidents, incidents and system outages. They frequently focus on result at the end of a time period and characterise historical performance.

Leading indicators, which are identified principally through the comprehensive analyses of the organisations, such as regulators and service providers. They are designed to help identify whether the providers and regulators are taking actions or have processes that are effective in lowering risk and are considered as “drivers” of lagging indicators. There is an assumed relationship between the two, which suggest that improved performance in a leading indicator will drive better performance in the lagging indicator. The safety maturity framework listed in European safety Programme + is an example of a leading indicator. This performance plan will use the safety maturity framework as a basis for the target setting and monitoring of leading indicator measuring the effectiveness of safety management.

Effectiveness of safety management

The proposed leading indicators measure the output of important elements of the safety management system to clarify that excellent safety performance is attributable to a safe system and not attributable to lack of safety incidents.

For regulators the Safety Maturity Framework methodology will establish the extent of progress made by ATM regulators with respect to the introduction of ATM regulatory oversight. For the regulators the framework aims to:

- a) Determine the level of ATM safety regulatory oversight
- b) Determine the extent to which learning is transferred across the industry
- c) Establish a path along which ATM regulatory authorities can focus their activities for continuous improvement.

For ANSPs the safety maturity framework measures the extent of progress with respect to the introduction of ATM safety management systems and how the SMS framework relates with safety in operations and engineering. Specifically it aims to:

- a) Determine the level of SMS improvement
- b) Determine the extent to which learning is transferred across the industry
- c) Establish a path along which ANSPs can focus their activities for continuous improvement.

For both regulator and service provider the safety maturity have identified study areas used as bricks to build up a picture of the organisations safety maturity. However, the content of the study areas differs between regulator and service provider. Within each study area there is defined 5 different maturity categories as listed below:

- a) Initiating
- b) Planning/Initial Implementation
- c) Implementing
- d) Managing and Measuring
- e) Continuous Improvement

Based upon the scores in the different study areas the organisation will receive an overall score for its safety maturity level based upon the 5 categories listed above.

Objectives, targets and monitoring

Overall safety objective

The Norwegian Ministry of Transport has developed a vision for the safety performance of the transportation sector stating that the overall goal is “*No fatalities within the transportation sector*”. Based upon this vision the Norwegian CAA has developed a vision for the aviation area aiming for “*No fatalities or casualties within the Norwegian aviation system*”. To facilitate the ATM systems contribution to this vision, we have developed an overarching safety objective for the Norwegian ATM system as a fundament for the monitoring of the safety performance of the system stating:

“No accidents and serious incidents in Norway with direct or indirect ATM contribution”

Avinor as the ANSP in Norway is the entity accountable for the achievement of this overarching objective. However, the regulator will indirectly contribute to this objective through the establishment of regulations, safety oversight and audits. The regulators indirect contribution will also be reflected through its safety maturity as listed below.

Safety target regulator – effectiveness of safety management

There is established a target for the effectiveness of safety management of the regulator related to his overall score in the safety maturity study. The target is:

“managing and measuring” in 2012-2013 and
“continuous improvement” in 2014.

The verification of the safety maturity score of the regulator will follow the established methodology with self reporting followed by a verification interview by EASA. The scores will be further evaluated by EASA standardisation inspections.

The regulator will establish a process allowing it to achieve the target described above. The regulators actual score will be published each year allowing a comparison between target and actual performance.

| | Initiating | Planning/Initial implementation | Implementing | Managing and measuring | Continuous improvement |
|------|-------------------|--|---------------------|-------------------------------|-------------------------------|
| 2012 | | | | X | |
| 2013 | | | | X | |
| 2014 | | | | | X |

Monitoring ANSP (AVINOR) – effectiveness of safety management

The safety maturity of Avinor will be monitored in accordance with the table below in RP 1. The verification of the safety maturity score of Avinor will follow the established process with self reporting followed by a NSA verification. Avinor’s actual score will be published each year allowing a monitoring of his safety maturity. This will form a sound basis for improvement initiatives in Avinor in the safety area.

| | 2012 | 2013 | 2014 |
|--|-------------|-------------|-------------|
| Overall score | | | |
| Number of study areas below “Implementing” | | | |
| Number of areas below “Managing and measuring” | | | |

In addition to the maturity study we will monitor and publish another set of leading indicators as listed below, also the results in these areas will form a sound basis for improvement initiatives in Avinor in the safety area.

| | 2012 | 2013 | 2014 |
|---|-------------|-------------|-------------|
| Number of investigated reports within internal limits for CNS | | | |
| Number of reports that are investigated within internal limits for ATM | | | |
| Safety Case indicator – reporting level and number of reports from airport vs area/unit/ services | | | |
| Number of reported safety case surveys | | | |

Monitoring of performance indicators

We have developed a set of performance indicators reflected in the number of incidents in the below described categories. Avinor is accountable for the safe executions of Air Navigation Services and consequently the entity responsible for the performance in these

areas. It is vital to keep in mind that the absence of incidents does not by itself indicate a safe system.

CAA Norway will extract these numbers from its database and use them as a basis for discussions at semi-annual safety meetings with Avinor. The experience gained by the monitoring of these performance indicators will be vital for the target setting in RP 2 and as a basis for a definition of acceptable level of safety within the SSP and EASP framework. In the monitoring of these performance indicators we will focus on the incidents with direct or indirect ATM contribution.

| | 2010 | 2011 | 2012 | 2013 | 2014 |
|---------------------------------------|------|------|------|------|------|
| Number of reported incidents | | | | | |
| Number of accidents | 0 | 0 | | | |
| Number of serious aviation incidents | 0 | 1 | | | |
| Number of reported Loss of separation | 49 | 60 | | | |
| Number of reported Runway Incursions | 97 | 69 | | | |
| Number of Runway Excursions | 14 | 13 | | | |
| Number of Airspace Infringement (AI) | 104 | 75 | | | |
| Number of level busts (LB) | 107 | 83 | | | |

Application of severity classification based on Risk Analysis Tool methodology

Avinor ANS has since 2004 used the predecessor of the RAT methodology as developed through Eurocontrol, and all occurrences reported internally since that time, has been classified according to this methodology.

In August/September this year, Avinor ANS was housing a seminar on the last update of RAT, lead by Eurocontrols expert on RAT. The updated tool is not yet quite complete from Eurocontrols side (on the ATM specific investigations). At the moment the lead investigators are testing and giving feedback on the tool. Avinor ANS goal is to have the tool formally implemented by the 1st of January 2012.

This methodology will be used to the reporting of:

| | Serious incident | Major Incident | Significant Incident | No Safety Effect | Not determined |
|---------------------------------|------------------|----------------|----------------------|------------------|----------------|
| Separation minima infringements | | | | | |
| Runway Incursion | | | | | |
| ATM specific occurrences | | | | | |

Just Culture

The level of presence and corresponding level of absence of just culture by the state and ANSP will be measured by a questionnaire as defined in the AMC GM to (EU) no 691/2007. The results will be sampled and made public as depicted in the tables below:

State:

| No. of questions answered with: | YES | NO |
|--|-----|----|
| Policy and its Implementation | | |
| Legal/Judiciary | | |
| Occurrence reporting and investigation | | |
| Identification of possible areas of improvement | | |
| Policy and its implementation | | |
| <ul style="list-style-type: none"> • • | | |
| Legal/Judiciary | | |
| <ul style="list-style-type: none"> • • | | |
| Occurrence reporting and investigation | | |
| <ul style="list-style-type: none"> • • | | |

ANSP:

| No. of questions answered with: | YES | NO |
|--|-----|----|
| Policy and its Implementation | | |
| Legal/Judiciary | | |
| Occurrence reporting and investigation | | |
| Identification of possible areas of improvement | | |
| Policy and its implementation | | |
| <ul style="list-style-type: none"> • • | | |
| Legal/Judiciary | | |
| <ul style="list-style-type: none"> • • | | |
| Occurrence reporting and investigation | | |
| <ul style="list-style-type: none"> • • | | |

b) Capacity targets and thresholds

Capacity in Norwegian Airspace 2012 – 2014

The Norwegian airspace covers a large geographic area and extends approximately 1.050 nautical miles (approx. 2000 km) from south to north with a total of 324 thousand square km of mainland (excluding Svalbard) and a significant amount of territorial waters. In addition Norway provides air traffic services in Bodø Oceanic FIR, a high seas area in the ICAO North Atlantic Region (NAT).

En-route capacity restraint has not been a major challenge in Norwegian airspace in recent years, with few exemptions such as shortage of en-route controllers in Stavanger AoR and the Eyjafjallajökull volcanic ash situation in 2010.

The traffic in Norway is expected to increase by an average of 3% (* Eurocontrol Medium-Term Forecast Feb. 2011 – Flight movements 2011-2017) per annum (IFR). Several capacity- and safety-enhancing projects are planned in order to meet the challenges the expected increase in traffic will lead to.

The following known or expected projects will or may affect airspace capacity 2012 – 2016:

| Project | Description | Schedule |
|---|--|-----------------|
| Norwegian Radar Programme (NORAP) | The overall aim of NORAP is to improve radar surveillance coverage, particularly in northern parts of Norwegian airspace. NORAP will contribute to more robust and accurate surveillance systems with high integrity which in turn will enhance air traffic control capacity through i.e. reduced separation minima in certain areas. Safety gain is also anticipated through enhanced surveillance performance in airspace with no or limited surveillance coverage to day | |
| Southern Norway Airspace Project (SNAP) | SNAP shall develop a new airspace structure within Stavanger AoR and southern part of Bodø AoR, including SIDs and STARs for the airports and TMAs herein to ensure sufficient capacity in terminal areas and adjacent ACC sectors. The new airspace structure will be environmentally optimized to allow for CDAs and CCDs and also to cope with the existing or new Noise Abatement Procedures at relevant airports. Airspace class C will most likely be implemented in CTAs, TMAs and CTRs. | 2014 |
| Terminal 2, Oslo Airport Gardermoen (OSL T2) | Due to traffic growth at Oslo Airport Gardermoen, the airport is to increase its capacity to handle up to 85 aircraft movements per hour. This in turn will make OSL capable of handling 28 million passengers or approximately 300.000 flights annually. | 2017 |

| | | |
|--|--|------|
| Performance Based Navigation (PBN) | Implementation of PBN will contribute to safety- and capacity increase as well as flight efficiency, reduced emissions and optimum route structure, i.e. CCDs and CDAs. However, some occasional delays may be encountered for brief periods in the time of implementation. In total, these are not believed to be significant. | 2016 |
| Oslo Advanced Sectorisation and Automation Project (ASAP) – Enhancement | The overall objective for Oslo ASAP is to develop a new airspace structure within Oslo AoR, including SIDs and STARs for Oslo and Farris TMA to ensure adequate capacity in these airspaces as well as adjacent sectors. The enhancement program is expected to take place before 2016 in order to improve and optimise the system based on continuous evaluation and operational experience from 2011 onwards in addition to the SNAP project. | 2011 |

Airspace capacity projects

The EU-wide target for capacity for 2014 is to achieve 0.5 minutes average en route ATFM delay per flight for the whole year and for all causes. National performance targets are expected to be consistent with this target. To assist States in setting a capacity target, EUROCONTROL have provided reference figures for individual ANSPs, which indicate values at national level that would be considered consistent with the EU-wide target.

Capacity in Norwegian airspace has historically been satisfactory. The reference values set for Norway are approximately the same as the present level. Today the ANSP has the ability to meet capacity problems without always taking into account the cost of the measures taken. This will become a greater challenge when the targets of cost-efficiency must also be taken into account.

Avinor A/S has scheduled a series of investments that are intended to provide increased capacity. There are also plans to increase the total number of air traffic controllers. Despite the fact that traffic will increase, there is reason to believe that it will be possible to maintain the current level of capacity.

For Norway the targets for capacity are described in the tables below. Table 2 shows the national target set for capacity. Table 3 shows that the target is consistent with the current level and in accordance with the reference values set by Eurocontrol.

In this performance plan there will only be set one capacity target for Norway. There will not be set targets for each individual ACC. Which level of target achievement each ACC should have, is for Avinor A/S to decide.

| Capacity KPI | 2012 | 2013 | 2014 |
|---|---------------------------|---------------------------|---------------|
| | Intermediate Value | Intermediate Value | Target |
| Minutes of en-route ATFM delay per flight | 0.04 | 0.04 | 0.05 |

Table 4: Presentation of the en-route capacity target for RP1

| | 2009A | 2010A | 2011F | 2012F | 2013F | 2014T |
|--|-------|-------|-------|-------|-------|-------|
| En-route ATFM delay prior to RP1 (en-route ATFM delay minutes per flight) | 0.13 | 0.05 | - | | | |
| Reference value from the capacity planning process of EUROCONTROL (en-route ATFM delay minutes per flight) | | | | 0.04 | 0.04 | 0.05 |
| % n/n-1 | | | | | | |
| National/FAB capacity target (en-route ATFM delay in minutes per flight) | | | | 0.04 | 0.04 | 0.05 |
| % n/n-1 | | | | | | |
| Difference between the target and the reference value | | | | - | - | - |

Table 7: En-route capacity target – details at national level

c) Environment targets and thresholds

In the first reference period (2012-2014) there shall be no mandatory national environment KPI or targets. Norway does not propose to adopt any optional environment KPI's for RP1. It is intended that the prime responsibility for achieving an EU-wide environment target (reducing the average horizontal en route flight efficiency by -0.75% of a percentage point), will rest with the European network management function.

The following known or expected projects will or may affect the achievement of the EU-wide environment target for RP1.

| Project | Description | Schedule |
|--|--|-----------|
| Oslo Advanced Simulation and Automation Project (ASAP) | The project was initiated to improve safety, capacity and efficiency. However environmental targets were also set for the project. The new operational concept and airspace design delivers more predictability for arriving aircraft to Oslo – Gardermoen. In addition the percentage of flights being able to execute a continuous climb departure to cruising level increase compared to the previous airspace structure. The estimated effect of the new terminal airspace design is a reduction of emissions in the range of 20.000 to 30.000 tons of CO2 per year. | 2011 |
| Further development of Oslo ASAP | When implemented in 2011, Oslo ASAP was the first airspace in Europe applying the so called Point-Merge concept. Through simulations the concept has demonstrated the ability to ensure a high number of Continuous Descent Arrivals (CDA's) during peak-traffic conditions as well as improving the predictability for arriving aircraft when demand exceeds available runway capacity. An arrival management and sequencing tool (AMAN) is included in the ASAP concept. It is important to gain operational experience with the new airspace structure and new operational concepts. A further development of these structures and concepts is planned for the period 2013 to 2016 and may include, but not limited to, further enhancement of AMAN functionality and introduction of suitable PBN procedures to improve environmental performance in the area. | 2013-2016 |

| | | |
|--|--|-----------|
| Southern Norway Airspace Project (SNAP) | The scope of the project is to redesign the airspace and route structure within Stavanger Area of Responsibility (AoR) as well as the southern part of Bodø AoR. The purpose of the project is to improve flight safety, improve airspace capacity and contribute to more efficient and standardised provision of ATS and improved environmental performance within the airspace concerned. The operational concept of SNAP is clearly linked to the Oslo ASAP project. The implementation of the revised airspace and route structures and revised operational concepts derived in the SNAP project is considered as an important milestone in the environmental action plan for the period 2012 to 2016. | 2013 |
| Airspace change project for Northern Norway | Following the implementation of the ASAP airspace in 2011 and the SNAP airspace in 2013, it is planned to implement a redesigned airspace and route structures in the remaining parts of the Norwegian AoR's. As for the ASAP and SNAP projects, a Northern Norway airspace project will need to meet environmental targets as well as targets related to safety, capacity and efficiency | 2011-2016 |
| Functional Airspace Blocks (NEFAB) and Free Route Airspace (FRA) | <p>Improved flight efficiency with reduced fuel consumption and emissions is one of the key elements related to the establishment of NEFAB. In this respect, implementation of a Free Route Airspace concept is considered as an important enabler, allowing airspace users to plan their flights independent of a fixed ATS route structure.</p> <p>A phased implementation of FRA in accordance with the overall plans for development of NEFAB. FRA implementation will therefore be considered in local airspace change projects and in the NEFAB cooperation with the aim of introducing FRA successively as soon as relevant safety- and system requirements can be met.</p> | 2011-2016 |

Environment projects

d) Cost-efficiency targets and thresholds.

The mandatory cost-efficiency target for RP1 is measured by the determined unit rate for en-route air navigation services. The indicators are the result of the ratio between the determined costs and the forecast traffic contained in the performance plans in accordance with Article 10(3) (a) and (b) of the performance scheme. The determined unit rate is expressed in national currency and in real terms and provided for each year of the reference period.

The EU-wide target for cost-efficiency is a reduction of the average European Union-wide determined unit rate for en route air navigation services from 59.97 Euros in 2011 to 53.92 Euros in 2014 (expressed in real terms, Euros 2009), with intermediate annual values of 57.88 Euros in 2012 and 55.87 Euros in 2013. This target represents a reduction of the average determined unit rate by 3.5% per annum.

When the European performance targets were set, these were initially compared with the cost forecasts for 2011, which were reported to Eurocontrol in November 2010. The cost forecasts have turned out to be higher than the actual costs of 2011. The Norwegian authorities find it most appropriate to use the actual figures from 2011 (forecast Nov 2011) as these figures give a more realistic impression of the cost reductions. The gap between the cost forecasts and the actual costs for 2011 can be explained by the following;

- The training and the licensing of new air traffic controllers were delayed for several months, which led to a decrease in staff costs. There was also a higher failure rate in ATC training than anticipated in the budget for 2011. In addition the recruitment for some engineering staff was delayed in comparison to the recruitment plan for 2011. In November 2011 this gap was calculated to approximately MNOK 30. In 2011 Avinor AS exceeded the budgeted costs for overtime. Exemptions from the Norwegian labour regulation are still needed to deliver sufficient capacity. This vulnerability is not acceptable for a continuous operation. The estimated costs for 2011 will therefore reoccur in 2012 as the recruitment plan is completed.
- The costs relating to consulting services turned out to be lower than estimated in the 2011 budget, due to postponed start-up of projects. The most important projects that were postponed are the implementation of new risk analysis models, the consolidation of ACC and APP functions, ISO certification and the development of a new business model. These costs will reoccur in 2012 as the projects are effectuated.

Avinor AS had also, in the period 2009-2010, implemented several cost-saving measures which gave a positive effect in 2011. Summarized it has to be concluded that several factors have resulted in lower costs for 2011 than what can be expected for future years.

The cost of capital is increasing strongly from 2011 to 2012. The calculation of the stakeholder's return of capital is altered in 2012, as net current assets are included in the asset base and a larger portion of investments is related to en-route. The asset base has also increased due to activation of man hours in projects and capitalization of new large investments such as surveillance equipment, ATM system up-grade in Oslo and new airspace structure in Oslo AoR. The European ATM Master Plan, Implementation Package 1 will require investments to be made during the period until 2013. Avinor A/S is working to ensure that IP-1 (European ATM Master Plan, first period) related investments will be included in the long-term investment plans.

In the Norwegian performance plan we have used "the actual figures" for costs and traffic in 2011 (forecast Nov. 2011). This has given us a seemingly less positive trend from 2011 to 2014, if compared to the forecast from 2010. We will however draw attention to the fact that the trend from 2009 to 2014 is, in our view, acceptable.

Historically, the Norwegian en-route unit rate has been among the highest in Europe, and higher than the countries we are compared with; Sweden, Finland and Poland.

In general the traffic complexity and traffic density in Norwegian airspace can be described as low. However it is important to note that Oslo TMA is categorized as a “major TMA” and the city pairs Oslo – Bergen, Oslo – Stavanger and Oslo – Trondheim are among the 5 busiest city pairs in Europe. In addition, Norwegian domestic traffic range as number 5 in Europe. (Statistic is based on a traffic sample, and the exact result may vary from day to day, but this is considered to represent a good indication of a regular frequency of flights)

These factors are important factors in design and operation of the Air Traffic Management system in southern Norway. Another factor to be considered in terms of costs and revenue is that Oslo Airport is located close to the airspace of Denmark and Sweden, resulting in relatively short distances flown for a high number of flights and a correspondingly lower number of en-route service units being generated. However the operational complexity, driving costs related to staff and infrastructure, is not significantly lower compared to other interfaces between Oslo TMA and neighbouring ACC-sectors.

Despite of the fact that overflying traffic in Norway is increasing the relative share of this traffic is lower than for instance in Poland and Sweden. The overflying traffic in Norwegian airspace counts for approximately 10 % of the total en-route traffic volume (in movements). The domestic traffic counts for approximately 50 % of the total volume and the remaining 40 % is international traffic to and from Norwegian airports. Overflying traffic has in general the potential to create a high volume of en-route service units without a proportionally increased use of human, technical and financial resources.

Of the total gate to gate costs 53.2% is allocated to the en-route cost base. This is a small percentage if compared with other countries. This allocation can mainly be explained by the airport structure in Norway. A widespread network of local and regional airports is fundamental for air transport and constitutes the backbone of the public transportation system. Norway has a large portion of small airports with terminal services. The services at these towers do not produce sufficient earnings, and are partly financed by cross-subsidization from commercial fees from the four largest airports in Norway - and not by terminal charges. It is a political choice to sustain the operation of the many airports throughout the country and is an important part of a strategy to sustain settlements in all regions. The population is widely dispersed and the inhabitants are to a large extent located in small communities or regional centres. This has resulted in an airport structure where a high number of small and medium sized airports are located in relatively remote areas. The allocation of en-route costs compared to the total gate-to-gate cost should be considered against this background. There is no reason to believe that the low portion of costs that are allocated to the en-route cost base arise because of an improper move of costs to the terminal cost base.

Avinor A/S has over the past years implemented several cost-efficiency measures. The company’s business plan 2012-2016 provides additional cost savings. The national targets set for cost-efficiency are based on this business plan and dialogue with the service provider.

| Cost-efficiency KPI | 2012 | 2013 | 2014 |
|--|---------------|---------------|---------------|
| | Target | Target | Target |
| Real en-route determined unit rate (in national currency at 2009 prices) | 481,5 | 465,8 | 445,0 |

Table 5: Presentation of the en-route cost-efficiency target for RP1

2.2 Consistency with EU-wide targets (and thresholds)

2.2.1 - Safety

There are no mandatory European safety targets for RP 1. Norway has, however decided to set a target for the overall maturity score of CAA Norway. Additionally a set of leading and lagging indicators have been selected for monitoring and subsequent publishing in RP1.

2.2.2 – Capacity

The target set for the Norwegian performance concerning capacity is in accordance with the reference values calculated from Eurocontrol. By adopting a target at this level **Norway is consistent with, and makes an expected contribution to the EU-wide target.** (cf. section 2.1.b)

2.2.3 – Environment

For the first reference period of the performance scheme, there will be no mandatory national environment targets. It is intended that the prime responsibility for the achievement of an EU-wide environment target (reducing the average horizontal en route flight efficiency by -0.75 of a point), will rest with the European network management function. (cf. section 2.1. c)

2.2.4 – Cost-efficiency

The Norwegian cost-efficiency target will entail a reduction in the determined en route unit rate for RP 1 of 7%. (Unit rate-DUR 2011=NOK475,7, unit rate-DUR 2014=NOK445.0). The EU-wide target for the same period is 10.1%. (Unit rate-DUR 2011=59,97EUR, unit rate-DUR 2014=53,92EUR). Due to circumstances explained earlier (page 20), the costs in 2011 were extraordinarily low. This is why the reduction in the unit rate is not consistent with the targets set for RP1. Norwegian authorities have however chosen to emphasize the trend from 2009 to 2014. This shows a reduction in the unit rate of 18.5%. On this basis we consider that the Norwegian trend is in line with the EU-wide targets.

Summary tables of relevant costs are provided below.

| | 2009 A | 2010 A | 2011 F | 2012 F | 2013 F | 2014 F |
|---|--------|--------|---------|---------|--------|--------|
| En-route total service units prior to RP1 | 1,495 | 1,583 | 1,701 | | | |
| Forecast total service units used for the determined unit rate | | | | 1,754 | 1,798 | 1,843 |
| Source: | | | Statfor | Statfor | 2.5% | 2.5 % |
| % n/n-1 | | 5,90 % | 7,49 % | 3,08 % | 2,50 % | 2,50 % |
| STATFOR service units forecast (Baseline scenario) | 1,495 | 1,583 | | | | |
| Date of STATFOR SU forecast: | A | A | sep.11 | sep.11 | | |
| % n/n-1 | | | | | | |

Table 8: En-route service units forecast used for the calculation of the national en-route cost-efficiency target

| ANS en-route cost per entity | Currency | 2009 A | 2010 A | 2011 F | 2012 D | 2013 D | 2014 D |
|--|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Avinor A/S | NOK | 724,1 | 728,8 | 765,1 | 810,0 | 816,3 | 813,0 |
| % n/n-1 | | | 0,64 % | 4,98 % | 5,87 % | 0,77 % | -0,40 % |
| MET | NOK | 12,6 | 8,3 | 8,5 | 8,3 | 8,2 | 8,1 |
| % n/n-1 | | | -33,80 % | 1,69 % | -2,05 % | -1,37 % | -0,99 % |
| NSA | NOK | 79,6 | 74,2 | 61,0 | 64,8 | 65,1 | 66,5 |
| % n/n-1 | | | -6,87 % | -17,72 % | 6,16 % | 0,55 % | 2,12 % |
| Total determined costs in nominal terms | NOK | 816,3 | 811,3 | 834,6 | 883,1 | 889,6 | 887,6 |
| % n/n-1 | | | -0,62 % | 2,87 % | 5,81 % | 0,74 % | -0,22 % |

Table 9: National determined en-route costs – breakdown per entity (in nominal terms in national currency). Forecast 2011 based on the latest forecast Nov 2011

| | Currency | 2009 A | 2010 A | 2011 F | 2012 D | 2013 D | 2014 D |
|---|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Total determined costs in nominal terms | NOK | 816 | 811,3 | 834,6 | 883,1 | 889,6 | 887,6 |
| Inflation % | | | 1,7 % | 1,4 % | 1,4 % | 1,6 % | 1,9 % |
| Inflation index (100 in 2009) | | 100 | 101,7 | 103,1 | 104,6 | 106,2 | 108,3 |
| Total determined costs in real 2009 terms | NOK | 816 | 797,7 | 809,3 | 844,5 | 837,3 | 819,9 |
| % n/n-1 | | | -2,28 % | 1,45 % | 4,35 % | -0,85 % | -2,08 % |

Table 11: National determined en-route costs – total in real 2009 terms. Forecast 2011 based on the latest forecast Nov 2011

| | Currency | 2009 A | 2010 A | 2011 F | 2012 D | 2013 D | 2014 D |
|---|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Determined costs in real terms (in national currency at 2009 prices) | NOK | 816,3 | 797,7 | 809,3 | 844,5 | 837,3 | 819,9 |
| Total en-route SUs | | 1,495 | 1,583 | 1,701 | 1,754 | 1,798 | 1,843 |
| Real en-route determined unit rate in national currency (at 2009 prices) | NOK | 546,2 | 504,0 | 475,7 | 481,5 | 465,8 | 445,0 |
| % n/n-1 | | | -7,7 % | -5,6 % | 1,2 % | -3,3 % | -4,5 % |
| 2009 Exchange rate (1 EUR=) | | | | | | | |

Table 12: National real en-route determined unit rate (in national currency at 2009 prices and in EUR2009) Forecast 2011 based on the latest forecast Nov 2011

2.3 Carry-overs from the years before RP1

The following table provides an overview of carry-overs from the years before RP1 that are relevant to the period covered by RP1.

| Carry-over from | To 2009 | To 2010 | To 2011 | To 2012 | To 2013 | To 2014 | To 2015 | To RP2 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|--------|
| 2003 | | | | | | | | |
| 2004 | | | | | | | | |
| 2005 | | | | | | | | |
| 2006 | | | | | | | | |
| 2007 | 62 | | | | | | | |
| 2008 | | -42 | -20 | | | | | |
| 2009 | | | 8 | | | | | |
| 2010 | | | | -31 | -31 | -31 | | |
| 2011 | | | | | | | | |
| Total | | | | | | | | |

Table 14: Carry-overs from the years before RP1 - under (-) and over (+) –recoveries (in nominal terms in national currency)

2.4 Parameters for risk sharing and incentives

No incentive schemes are proposed for capacity, safety and environment in Norway for RP1. Neither for ANSP and Meteorological service provider nor for airspace users, the incentives in relation to cost-efficiency are defined in the charging scheme regulation.

In terms of cost-efficiency the risk sharing shall be in accordance with Article 11a of Commission Regulation (EC) No. 1794/2006 (Charging scheme)

| KPA | Incentive schemes applied on ANSPs at National level for RP1 |
|---------------------|--|
| (a) Safety | No incentive schemes |
| (b) Capacity | No incentive schemes |
| (c) Environment | No incentive schemes |
| (d) Cost-efficiency | The cost risk-sharing mechanism provides that costs in excess of the determined cost shall be borne by the entity concerned, and if costs fall short of the determined costs, the entity may retain the shortfall. |

Table 16: Presentation of the incentive schemes at National/FAB level for RP1

The determined costs established in relation to:

- the costs of the national authority (Luftfartstilsynet)
- the determined costs of Meteorologisk Institutt

are not subject to traffic risk-sharing and may be recovered regardless of the level of traffic.

The entity concerned must therefore bear all the cost risk. The Common Charging Regulation allows, however, certain exceptions to this principle, in relation to:

- (i) unforeseen changes in national pension regulations and pension accounting regulations;
- (ii) unforeseen changes in national taxation law;
- (iii) unforeseen and new cost items not covered in the national performance plan but required by law;
- (iv) unforeseen changes in costs or revenues stemming from international agreements;
- (v) significant changes in interest rates on loans.

In Norway, it is proposed that all five of these exceptions should be allowed to be passed through.

Where, over a given year "n", the actual number of service units exceeds the forecast established at the beginning of the reference period by more than 2 %, 70 % of the additional revenue obtained by the air navigation service provider(s) concerned in excess of 2 % of the difference between the actual service units and the forecast with regard to determined costs shall be returned to airspace users no later than in year n+2.

Where, over a given year "n", the actual number of service units falls below the forecast established at the beginning of the reference period by more than 2 %, 70 % of the loss in revenue incurred by the air navigation service provider(s) concerned in excess of 2 % of the difference between the actual service units and the forecast with regard to determined costs shall be borne by the airspace users in principle no later than in year n+2.

3 - Contribution of each accountable entity

The accountable entities in relation to the national performance plan for Norway comprise:

- **Avinor A/S (Ltd).** Avinor A/S is the national certified air navigation service provider (ANSP) designated by the Norwegian government to deliver air navigation services for en-route and TMA air traffic within Norwegian airspace.
- **Meteorologisk institutt.** Meteorologisk institutt is the national certified provider of meteorological service (MET) designated by the Norwegian government as MET provider within the Norwegian airspace. The designation is valid until 2012, but will be prolonged until 2014.
- **Luffartstilsynet.** Luffartstilsynet is the national Civil Aviation Authority of Norway.

3.1 Avinor A/S (Ltd)

Safety: Avinor A/S as the ANSP in Norway is the entity accountable for the safety performance. However, the regulator (CAA and The Ministry of Transport and Communications) will indirectly contribute to the safety performance through the establishment of regulations, safety oversight and audits. The regulators indirect contribution will be reflected through its safety maturity as listed in the plan. There is a defined target for the safety maturity of the regulator in chapter 2.

Capacity:

Avinor A/S will be the only entity responsible for meeting the capacity targets set out in this plan.

Environment:

No national targets are set on environmental impact. The responsibility for the measures described in section 2.1.b, however, will belong to Avinor A/S.

Cost-efficiency:

To achieve the objectives set for cost-efficiency the contribution from Avinor A/S will be of crucial importance. More than 98% of the determined cost base is related to Avinor A/S.

Avinor A/S has launched a cost-efficiency program for RP01 with the aim of reducing the ANS cost base by approximately MNOK 260 compared to the 2011 cost base (forecast Nov. 2010). The program aims to reduce costs by a total of MNOK 260. Approx. 50% will be related to the en-route cost base. This is a program which will affect all parts of the ANS organisation. Included in the program is a planned reduction of support staff by approximately 60 full time equivalents (12%), with a further planned reduction in RP02. Even though Avinor A/S is reducing the number of support staff during RP01, there is still a need for recruiting more ATCOs. The total number needed have been reduced by approximately 6% compared to earlier recruitment plans. The reason for being able to take such a decision is that Avinor A/S has developed plans to increase ATCO-productivity during RP01. This means that even though the cost related to ATCOs will increase a bit during RP01, the decision on the reduction of the number of ATCOs needed in the years to come, will definitely have a positive impact on cost-efficiency during RP02.

| Avinor A/S | Currency | 2009 A | 2010 A | 2011 F | 2012 D | 2013 D | 2014 D |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|
| Staff | NOK | 495,8 | 514,2 | 542,4 | 563,2 | 569,7 | 576,6 |
| Other operating costs | NOK | 165,6 | 145,0 | 150,3 | 144,4 | 140,0 | 134,8 |
| Depreciation | NOK | 43,9 | 51,8 | 45,5 | 56,0 | 56,1 | 48,7 |
| Cost of capital | NOK | 18,8 | 17,8 | 26,9 | 46,3 | 50,4 | 53,0 |
| Exceptional items | NOK | 0,0 | 0 | 0 | 0 | 0 | 0 |
| Total en-route costs | NOK | 724,1 | 728,8 | 765,1 | 810,0 | 816,3 | 813,0 |

Table 18: Entity Avinor A/S - Determined en-route ANS costs by nature (in nominal terms in national currency)

| Avinor A/S | Currency | 2009 A | 2010 A | 2011 F | 2012 D | 2013 D | 2014 D |
|--------------------------|----------|--------|--------|--------|--------|--------|--------|
| Air Traffic Management | NOK | 372,8 | 375,6 | 405,4 | 431,3 | 434,1 | 431,8 |
| Communication | NOK | 13,8 | 13,9 | 15,0 | 16,0 | 16,1 | 16,0 |
| Navigation | NOK | 220,9 | 222,6 | 240,3 | 255,6 | 257,2 | 255,9 |
| Surveillance | NOK | 82,8 | 83,5 | 90,1 | 95,8 | 96,5 | 96,0 |
| Search and rescue | NOK | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Aeronautical Information | NOK | 33,7 | 33,2 | 14,3 | 11,3 | 12,4 | 13,4 |
| Meteorological services | NOK | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Supervision costs | NOK | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Other State costs | NOK | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Total costs | NOK | 724,1 | 728,8 | 765,1 | 810,0 | 816,3 | 813,0 |

Table 19: Entity Avinor A/S- Determined en-route ANS costs by service (in nominal terms in national currency)

Terminal ANS costs

Terminal cost in Norway includes: Oslo airport, Gardermoen, Stavanger airport, Sola, Bergen airport, Flesland and Trondheim airport, Værnes. Avinor A/S is the accountable ANSP for all four airports.

| Avinor A/S | Currency | 2009 A | 2010 A | 2011 F | 2012 D | 2013 D | 2014 D |
|-----------------------|----------|--------|---------|---------|---------|---------|---------|
| Staff | NOK | | 252 611 | 263 399 | 284 238 | 271 507 | 269 372 |
| Other operating costs | NOK | | 85 364 | 91 122 | 97 310 | 93 178 | 92 584 |
| Depreciation | NOK | | 36 124 | 35 911 | 40 843 | 39 772 | 41 864 |
| Cost of capital | NOK | | 25 675 | 18 932 | 19 254 | 22 681 | 29 715 |
| Exceptional items | NOK | | 0 | 0 | 0 | 0 | 0 |
| Total terminal costs | NOK | | 399 773 | 409 364 | 441 645 | 427 138 | 433 535 |

Table 19: Entity Avinor A/S - Terminal ANS costs by nature inclusive Met. and NSA. (in nominal terms in national currency)

Return on Equity

The air navigation provider, ANS, is at present a division of a limited company – Avinor AS. ANS is not a separate legal entity. Avinor AS is organised into five reporting entities (3 divisions and group management functions). None of these divisions in Avinor AS has separate balance accounts at present. Avinor AS is a single financial entity, both legally and financially. Except for fixed assets, almost all of balance sheet items of Avinor AS consist of items, which are not related to the separate reporting entities.

In September 2011 the Ministry of Transport and Communications hired Deloitte A/S to assess the appropriate level of equity returns. The Norwegian authorities have accepted the

conclusions from the Deloitte-report to estimate the return on equity in the national performance plan. Annex D.

| Avinor A/S | Currency | 2009 A | 2010 A | 2011 F | 2012 D | 2013 D | 2014 D |
|--------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Net book value fixed assets | NOK | | 187,3 | 364,0 | 499,0 | 552,0 | 588,0 |
| Adjustments to total assets | NOK | | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Net current assets | NOK | | 0,0 | 0,0 | 110,9 | 111,7 | 109,0 |
| Total asset base | NOK | | 187,3 | 364,0 | 609,9 | 663,7 | 697,0 |
| Cost of capital pre tax rate % | | | 9,5 % | 9,5 % | 7,6 % | 7,6 % | 7,6 % |
| Return on equity % | | | 9,8 % | 9,8 % | 8,4 % | 8,4 % | 8,4 % |
| Average interest on debts % | | | 3,8 % | 3,8 % | 3,9 % | 3,9 % | 3,9 % |

Table 20: Entity Avinor A/S - Complementary information on the cost of capital en-route (in nominal terms in national currency)

Investments

The long term investment plan for Avinor ANS is based on four major “building blocks” being ATM-systems, Surveillance systems, NAV-systems and Communication systems. Each of these areas is considered below in relation to performance and the 29 Operational Improvements in the European ATM Master Plan.

ATM-systems

A major part of the investment plan for the period 2011 – 2015 is an upgrade of Avinor’s main ATM-system. This change is expected to increase automation and consequently enable the reduction of support staff and increase controller productivity at operational units. This system upgrade is also a major enabler to deliver a set of Operational Improvements in the European ATM Master Plan. Among the 29 OI’s we consider that this major system upgrade will enable or support the following of the 29 OI’s:

- AOM-0205 Modular Temporary Airspace Structures and Reserved Areas
- AOM-0401 Multiple Route Options & Airspace Organisation Scenarios
- AOM0504-Optimum Trajectories in Defined Airspaces at Particular Times
- CM-0202 - Automated Assistance to ATC Planning for Preventing Conflicts in En Route Airspace
- TS-0305 Arrival Management Extended to En Route Airspace

In addition these investments constitute an important enabler in delivering the Norwegian Local Single Sky Implementation Plan. We consider the planned investments as an important enabler for the following ESSIP-objectives:

- ATC 02.5, ATC02.6 and ATC02.7 which are all related to ground based safety nets. (APW, MSAW and APM)
- ITY-COTR, Implementation of ground-ground automated coordination processes
- ITY-AGDL, Initial ATC air-ground data link services above FL 285

The upgrade of the ATM-system is also important in relation to implementation of new surveillance technology where Avinor is working both on ADS-B implementation and Wide Area Multi-lateration.

Implementation of Free Route Airspace is a central element in the operational concept for the North European FAB. In terms of FRA implementation, ATM-system upgrades are also considered important enablers and FRA implementation is expected to deliver substantial benefits to airspace users.

Within the ATM-systems domain, investments related to airspace change projects are also included. The major project in Norway for the period 2011 – 2015 is the South Norway Airspace Project (SNAP). SNAP follows a similar airspace change project for the Oslo Area of Responsibility. These projects are considered to support the following OI's:

- AOM-0205 Modular Temporary Airspace Structures and Reserved Areas
- AOM-0401 Multiple Route Options & Airspace Organisation Scenarios
- AOM-0601 - Terminal Airspace Organisation Adapted through Use of Best Practice, PRNAV and FUA Where Suitable
- AOM-0602-Enhanced Terminal Airspace with Curved/Segmented Approaches, Steep Approaches and RNAV Approaches Where Suitable
- AOM-0802 Modular Sectorisation Adapted to Variations in Traffic Flows

Surveillance

Within the surveillance domain, the investment strategy must both ensure necessary continuity in the existing radar infrastructure as well as paving the road for new surveillance technology. In addition there is a need to improve surveillance coverage in parts of the country, mainly to serve traffic to and from regional airports. To improve surveillance coverage and also to ensure several layers of surveillance, new surveillance technologies like ADS-B and WAM are considered. Investment plans are also expected to be updated in line with the technological and regulatory developments related to surveillance. A robust surveillance structure is regarded as a key element to ensure both capacity and safety in Norwegian airspace.

Navigation

The planned investments within the navigation domain will support implementation of PBN in Norwegian airspace and at Norwegian airports. The main drivers in the investment plan is deployment of a sufficient DME-DME infrastructure to support PBN as well as project related costs related to implementation of the national PBN-plan. This investment and implementation strategy is also considered to support or enable the following OI's:

- AOM0504-Optimum Trajectories in Defined Airspaces at Particular Times
- AOM-0601 - Terminal Airspace Organisation Adapted through Use of Best Practice, PRNAV and FUA Where Suitable
- AOM-0602-Enhanced Terminal Airspace with Curved/Segmented Approaches, Steep Approaches and RNAV Approaches Where Suitable
- AOM-0703 Continuous Climb Departure

Communication

The planned investments within the communications domain are to a large extent planned in order to maintain and ensure the continuity of the total communication infrastructure. However some communication investments are related to new concepts of operation which are expected to improve productivity and performance.

Other investments

The investment plan also contains other types of investments outside the 4 major areas described above. The main driver is investments related to the AIM-domain in order to enable the transition from AIS to AIM in accordance with planning processes within ICAO and in Europe. The investments are also made to increase capacity related to procedure

design, database maintenance and promulgation of aeronautical information. This is considered an important enabler for PBN-implementation where an increased demand for new procedures is expected. These investments are considered to support the following OI's:

- AOM-0601 - Terminal Airspace Organisation Adapted through Use of Best Practice, PRNAV and FUA Where Suitable
- AOM-0602-Enhanced Terminal Airspace with Curved/Segmented Approaches, Steep Approaches and RNAV Approaches Where Suitable
- AOM0504-Optimum Trajectories in Defined Airspaces at Particular Times

The main capital expenditures 2012 – 2016 will be as follows (000).

| Capital expenditure (national currency) | Currency | 2009A | 2010A | 2011F | 2012F | 2013F | 2014F | 2015F | 2016F |
|---|----------|-------|-------|-------|-------|-------|--------|--------|--------|
| NORAP | NOK | 82164 | 6287 | 11848 | | | | | |
| OSLO ASAP (innkl. OASE) | NOK | 54192 | 16369 | 5100 | | | | | |
| ADS-B-Ekofisk | NOK | | | 16350 | 12500 | 2400 | | | |
| SNAP | NOK | | | 4992 | 40953 | 13141 | | | |
| BOAS | NOK | | | 3000 | 20000 | 10000 | | | |
| ATM-systems | NOK | | | | 98338 | 86838 | 145638 | 154938 | 150338 |
| Sub-total main Capex above | NOK | | | | | | | | |
| Sub-total others Capex | NOK | | | | | | | | |
| Total Capex | NOK | | | | | | | | |

Table 22: Entity Avinor A/S - Annual investments (capex) in nominal terms in national currency for en-route and terminal ANS. *The investment plan are currently being revised by Avinor A / S*

ADS-B-Ekofisk is a project related to offshore helicopters in its first phase. However the project paves the way for inclusion of future surveillance technology in Avinors ATM system. This explains why some of the costs are attributable to en-route airspace users.

BOAS is a surveillance and flight plan data processing system for Oceanic operations entirely attributable to en-route airspace users.

Incentives

No incentive schemes are proposed for capacity, safety and environment in Norway for RP1. The incentives in relation to cost-efficiency are defined in the charging scheme regulation

3.2 Meteorologisk Institutt (The Norwegian Meteorological Institute) and Luftfartstilsynet (Norwegian-CAA).

The Norwegian Meteorological Institute and the Norwegian-CAA is considered to be accountable only for the cost-efficiency target.

3.2.1.

The Ministry of Transport has designated The Norwegian Meteorological Institute as the meteorological service provider in all airspace under the Norwegian responsibility. (Regulation 550/2004 art. 9 nr 1) The designation is valid until 2012, but will be prolonged until 2014.

Avinor A/S has signed an agreement with The Norwegian Meteorological Institute that describes the scope of the delivery. Avinor A/S covers meteorological costs according to the principle of cost recovery. The agreement expires in 2012.

The meteorological costs included in the en-route cost-base is based on the actual forecast products related to en-route services such as area forecasts, upper-wind forecasts etc. In addition, a proportion of the support costs and other operating costs are allocated to the - costs according to a defined allocation key.

In this plan there is provided a reduction of meteorological costs at 3.45% per year compared to the level of 2011. Anticipated reduction in meteorological-costs is equal to the reduction of other operating costs in the en route cost base. It is expected that Avinor A/S in the new contract with The Norwegian Meteorological Institute ensures that the anticipated efficiency improvements are implemented

3.2.2.

Also for the NSA it is assumed a similar annual reduction of 3.45%. It is expected that CAA-Norway will be able to deliver the same service to Avinor A/S, to a lower price.

| ANS en-route cost per entity | Currency | 2009 A | 2010 A | 2011 F | 2012 D | 2013 D | 2014 D |
|--|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| MET | NOK | 12,6 | 8,3 | 8,5 | 8,3 | 8,2 | 8,1 |
| % n/n-1 | | | -33,80 % | 1,69 % | -2,05 % | -1,37 % | -0,99 % |
| NSA | NOK | 4,6 | 2,3 | 2,4 | 2,4 | 2,3 | 2,3 |
| % n/n-1 | | | -50,32 % | 7,06 % | -2,06 % | -1,39 % | -0,98 % |
| Total determined costs in nominal terms | NOK | 17,2 | 10,6 | 10,9 | 10,7 | 10,5 | 10,4 |
| % n/n-1 | | | -38,19 % | 2,83 % | -2,05 % | -1,38 % | -0,99 % |

Table 9B: National determined en-route costs – breakdown per entity (in nominal terms in national currency)

Incentives

No incentive schemes are proposed for capacity, safety and environment in Norway for RP1. The incentives in relation to cost-efficiency are defined in the charging scheme regulation

4. Civil-military dimension of the plan

Nothing in this plan shall prevent military access to airspace for missions and tasks directly related to preserving the integrity of Norwegian airspace and other missions related to Norwegian sovereignty.

Norway has not developed Performance Indicators for the measurement of military mission effectiveness related to access to airspace for training purposes. There is a process within the FUA expert group to analyse military access to and utilization of booked training areas. This process should lead to the identification of performance indicators for this area in RP 2.

4.1. Performance of the FUA application

In August 2007 the Flexible Use of Airspace concept was established in Norway based on implementation of the Regulation 2150/2005 - Common Rules for the Flexible Use of Airspace. An agreement between No CAA and No Military Authority was put in place based on the 2005 agreement between ANSP Avinor and Armed Forces as to Pre-Tactical Airspace Management (ASM) with description of airspace areas and airspace allocation procedures. The Norwegian Flexible Use of Airspace concept included agreements and procedures, is revised as from 7 April 2011.

The following is an overview of the structures put in place at the three FUA levels based on agreements.

FUA Level 1

Norway has established a joint civil and military High-Level Airspace Policy Body at Level 1 which formulates the national ASM/FUA policy and carries out the necessary strategic planning work, taking into account national and international airspace user's requirements. This High-Level Airspace Policy Body is assisted by an - a permanent body to support Strategic Airspace Management policy in addition to planning and co-ordination.

The High-Level Airspace Policy Body meets annually or more frequently if deemed necessary, and is supported by the Advisory ATM expert group which will provide expert advice, develop the necessary procedures and practices and implement decisions made by the High-Level Airspace Policy Body.

The Standing Advisory ATM expert group meets regularly and consists of representatives from National Supervisory Authority (NSA) and experts from ANSP Avinor and Norwegian Armed Forces. The expert group may convene other airspace users on case-to-case bases.

FUA Level 2

The FUA concept includes establishing a joint civil/military Airspace Management Cell (AMC) at Bodø ATCC. Staffing is jointly responsibility between Avinor and Norwegian Armed Forces. AMC Norway shall perform pretactical ASM through day-to-day operations according to conditions and procedures described in "EUROCONTROL Airspace Management Handbook for the Application of the Concept of the Flexible Use of Airspace"

FUA Level 3

Tactical ASM Level 3 consists of the real-time activation, deactivation or reallocation of the airspace allocated at Level 2 and the resolution of specific airspace problems and/or traffic

situations between ATS units and military coordinating units, as appropriate. Coordination procedures for Level 3 shall be described in a Letter of Agreement (LoA) between Avinor and the Norwegian Air Force.

The provision of Air Traffic Services in Norway is a civil service provided to all General Air Traffic (GAT). Military Early Warning and Control service provide service to military Operational Air Traffic (OAT) in close coordination with Avinor as civil ANSP. Based on this the ACM and the relevant ATS Unit will implement flexible use of airspace on a tactical basis.

With this organisation in place, Norway meets all requirements for FUA at the national level. For the time being Norway has no cross-border airspace for FUA operations. Expansion of FUA cross-border activities is being considered as part of the NEFAB establishment.

The Norwegian NSA has been given the responsibility of monitoring the functioning of FUA in terms of safety, airspace capacity, efficiency and flexibility, as part of its yearly auditing programme. The Norwegian FUA concept of operation works efficiently and do not have noticeable negative influence on airspace capacity and environment target.

4.2 Other Civil-Military Dimension

All provision of ATS in Norway is civil. Avinor is certified and appointed as Service provider in controlled airspace, both en-route and in TMA's. The military Control and Warning System is operating in controlled airspace under the FUA concept and based on operational LoA with Avinor.

5. Analysis of sensitivity and comparison with previous performance plan

5.1 Sensitivity to external assumptions.

Traffic

A reduction in traffic will pose the greatest risk of not achieving the objectives of the plan. Negative traffic growth will primarily affect the ability to achieve the desired reduction in unit rate.

Traffic growth will be closely associated with the overall economic development in Norway, but also in Europe and world wide. Historically, air traffic is vulnerable to fluctuations in world economy.

Terrorist attacks aimed at the aviation targets will also be events that could negatively affect traffic

Sudden and unexpected drop in traffic, either due to economic conditions or other unexpected events, will cause that cost-efficiency targets can not be reached. Service providers' costs is mainly fixed, and it will take time to restructure to a lower production.

The possibility that such negative developments will take place is considered to be very limited. The Norwegian performance plan assumes continued economic growth and stability in our part of the world

Interest rates

Rising interest rates will pose a moderate risk of not achieving the objectives of the plan. Increasing interest rates will primarily affect the ability to achieve the desired reduction in unit rate. Capital costs represent a limited percentage of the cost base, but a strong increase in interest rates may affect the possibility to achieve the target of cost-efficiency.

Exchange rates

There are no anticipated course developments which are expected to affect the goals of the plan negatively.

6. Implementation of the performance plan

The NSA will carry out performance oversight and monitor the performance plans and targets as required. The NSA will at least semi-annual analyze collected data to review the level of performance achievement in relation to predefined targets. The results will be published in a separate annual report. There will be annual meetings to inform the airspace users about the status of implementation of the plan.

6.1 Monitoring safety performance.

The safety performance will be monitored monthly and reported annually in a safety oversight report. The verification of effectiveness will be in accordance with the process described in the AMC/ GM to the amended (EU) no 691/2010, using the attached questionnaire for the state and the ANSP. The NSA will organise bilateral interview sessions with the ANSP after the reception of the filled out questionnaire. The lagging indicators will be monitored monthly and published in the annual safety oversight report.

Avinor have the revised RAT formally implemented by the 1st of January 2012 and the reporting of the severity of the defined set of indicators will be done in accordance with that methodology.

The presence and corresponding absence of just culture will be measured by application of the questionnaire attached to the AMC GM (EU) no 691/2010. The results will be reported in the annual safety oversight report.

6.2 Monitoring environment performance.

No environment target has been set.

6.3 Monitoring capacity performance.

The monitoring of the capacity target is based totally on data collected by Eurocontrol. The capacity target will be monitored twice a year in 2012 and 2013 and quarterly in 2014. If the data shows that the target will be hard to reach, the NSA will take initiative to implement corrective actions.

6.4 Monitoring cost-efficiency performance.

The monitoring process for the cost-efficiency targets will follow the two yearly sessions in the Enlarged Committee.