

ANNUAL REPORT

ADMINISTRATION DE
LA NAVIGATION AÉRIENNE (ANA)

AIR TRAFFIC SAFETY
STARTS WITH US


2017
&
2018



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de la Mobilité
et des Travaux publics

Administration de la navigation aérienne

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AUTHORITY	NAME	DATE	SIGNATURE
ANA	Claudio CLORI Director ANA	01.07.19	

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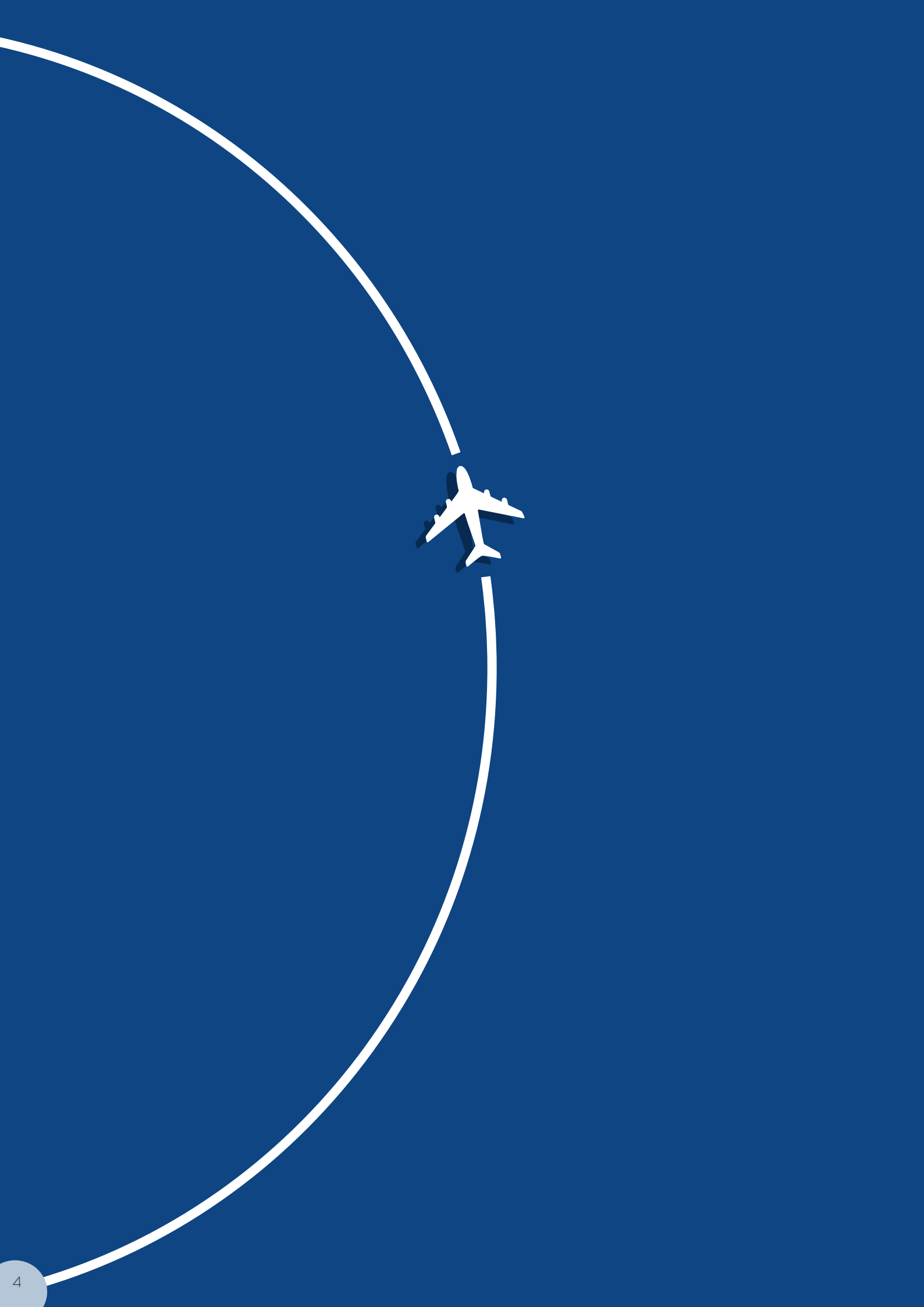
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This Annual Report for 2017 and 2018 gives the results and achievements of ANA, the ANSP of Luxembourg.

Throughout both years, ANA delivered a safe and efficient service and managed to attend to another year of growing demand in terms of traffic and capacity.

The year 2017 was a year of further developments and changes. Together with us, the Ministry (MMTP) set the tone and direction for the coming years:

- air traffic control services in Approach and Tower will continue to be delivered by ANA in the future
- technical cooperation with partners in FABEC continue for mutual benefit
- a new generation of state of the art for technical infrastructure will be established and used

ANA has drawn its conclusions and has started in 2017, and continued in 2018, to successively revise the work programme and projects with this focus in mind. We will meet the upcoming next generation of CNS ATM systems with confidence and competence. Major investments are planned and implementation started in 2018.

As the Director of ANA, I have the pleasure to work with a dedicated team that has taken up the challenges and makes it all happen. This has already started to take effect in 2017. The present report addresses the major steps made and achievements reached in the past two years:

- the organisational structure and line management of ANA have been adapted to face the upcoming challenges
- the compliance of our services in accordance with national and European regulation in all performance areas is high
- we foster the competence and motivation of our people at ANA in all areas as the key enablers for our success
- we improved the results in safety, capacity and cost efficiency – they are stable and compliant.

These achievements cannot be taken for granted nor can they simply be demanded. It is the extra step the people at ANA have walked to reach it. Their dedication and motivation to achieve is key and I wish to express my appreciation for this sign of willingness and competence.

It is us, the people at ANA that made all this happen.

Thank you!

Claudio Clori
Director ANA



FIRST FACTS...

Since the beginning of the current Reporting Period (RP2) traffic and service units have steadily increased. Except for freight, which remains constant in 2018, the 2017 and 2018 figures represent new records for Luxembourg airport and ANS.



LUXEMBOURG TRAFFIC, PASSENGERS AND FREIGHT

	2015	2016	2017	2018	Increase 2016-17	Increase 2017-18
Total movements	85.031	86.402	89.944	94.586	+ 4,1 %	+ 5 %
International Movements	65.128	69.577	74.515	79.109	+ 7,1 %	+ 6 %
Passengers (Mio)	2,687	3,022	3,599	4,037	+ 19,1 %	+ 12 %
Freight (t)	737.625	801.807	897.127	894.649	+ 11,9 %	0 %
Actual terminal Service Units (SU) (in .000)	41,1	45,7	50,9	54,4	+ 11,4 %	+ 6,9 %
SU forecast in Performance Plan	41,3	43,0	44,7	46,9	Delta PP – Actual 2017: + 13,8 %	Delta PP – Actual 2018: + 16 %

INCREASE 2017-18

The trend at Luxembourg airport in these figures is in line with trends reported by other airports: A much steeper increase in passenger numbers – more than 19% in 2017 and 12% in 2018 – compared to the increase in traffic movements. This indicates that airlines use larger aircraft as indicated by a much bigger increase in service units and most probably achieve a better load factor on average.

The number of terminal service units increased by 11,4% in 2018 compared to the year 2017. Compared to the Per-



formance Plan, these figures were up by 13,8% above the plan in 2017 and a further 16% in 2018.

It is rather unlikely that this trend will continue in coming years as recent forecast figures for 2019 onwards indicate.

Looking at the latest (February 2019) STATFOR (Base) forecast for 2019 and 2020 a moderate increase to 55.400 SU's (+ 1,4%) and 56.900 (+ 2,6%) is expected in 2020.

ANA 2017 – 2018 HIGHLIGHTS

During 2017, a number of changes and new directions in management and ANS developments took place. The decision that ANA continues as the sole provider for ANS and CNS services in Luxembourg using modern, up to date equipment and infrastructure was essential to strengthen its position on the national and international market place.

For the technical services in CNS, the decision to manage and implement the entire technical infrastructure in all service areas of ANA gives more responsibilities and challenges to the CNS team. A major step was the launch of the project to update and in fact renew the current radar surveillance (SUR) system.

The work started in 2017 and continued throughout 2018. The aim is to have a fully compliant new radar system with new Controller Working Positions and a training simulator in place in 2019. The system will be operational in July 2019.

The full list and detailed description of the projects and their relation to the strategic objectives and activities are documented in the Annual Plan 2017-2018 and in the Business Plan 2017 – 2021.¹

The calendar of events highlights some important developments in the period of this report.

1 An updated Annual Plan 2019 covers the entire year 2019 (issued in July 2019).

In 2018 ANA continued to bring the management structure in line with new requirements and changes. One important step in 2018 was the start of the re-certification process for our AIS service (now fully achieved). Another important step was the re-integration of projects into the technical service domain CNS of ANA.

The portfolio of new or retained projects is ambitious. Project management and the financial and human resources that must be available to enable the good results are step-by-step integrating their contributions into one common process.

ANA 2017-2018 CALENDAR OF EVENTS

Months	2017	2018
01	Upgrade (single mode) of Fiber optic and copper cable network (for all A-SMGCS sites)	2 Continuous Descent Operations procedures (CDOs) implemented reducing fuel consumption and noise. ANA starts to evaluate suppliers environmental approach and includes ENV measures in tender documents
02	TOKAI (Toolkit for accident investigation) implemented	Intersection take-off Echo on RWY06 implemented for M-category aircraft when RWY 06 is in use
03	New wind sensors installed incl. wind displays (on TWR, APP, MET and CNS), data collectors frangible masts	A-SMGCS data and info screen installed in APP to increase situational awareness of ground traffic
04	–	Creating a direct contact on ANA website for resident complaints eTOD data for the entire country and the aerodrome are available – installation of software handling the data started
05	New ISO 9001 certification according to new version	ANA car fleet reduced CO2 emissions from 149g/km in 2016 to 145 g/km end 2017 to 135 mid 2018 ANA – ANS Security concept implemented in accordance with intern. and EU standards
06	Decision for a full update of the current radar system (SUR) in compliance with EU Reg 1207/2011	MUAC fall-back radar display and connection installed Letter of agreement between ANA and LU Army LU Rescue Policy agreed; this allows creating TSA's for UAV operations in full coordination between the three parties
07	Full Integrated Briefing (MET, AIS) implemented in accordance to EUROCONTROL ESSIP	Surveillance Data Distribution System (SDDS) installed and ready for testing SIS Fire brigade and rescue unit becomes part of the national CGDIS ¹
08	A-SMGCS Level 1 goes operational - control of aircraft and vehicle on the ground under all weather conditions	eTOD software installation completed
09	Work on SUR chain update commences with supplier company Leonardo	Replacement of the Direction Finder (DF) MUAC Fall-back Radar system available as a controlling tool and contingency
10	LoA between ANA and Luxembourg Air Rescue & Police established – allows simultaneous operation of Rescue and Police helicopters during S-VFR conditions	New network infrastructure and topology installed in all CNS operated stations Replacement of MET Ceilometer
11	Aerodrome certification for ELLX according EU Reg 139/2014 achieved ISO 14001 Certification	Radio backup (RESQ) system replaced (8.33 kHz capable) Main system Rx/Tx equipment and antennas replaced (8.33 kHz capable)
12	Implementation of procedures for environmental urgencies	Full migration to 8.33 kHz of all relevant systems. MET lightning detector system fully implemented and in operation AIS re-certification process start / audit

¹ Corps grand-ducal d'incendie et de secours (CGDIS)



OUR PEOPLE

ANA appreciates its staff who has shown its professionalism in providing safe, efficient, continuous and sustainable services in air navigation and on the aerodrome. The achieved results show this clearly.

The core task of the HR function in ANA is to ensure that ANA retains staff of the right calibre and maintains and develops the skills of its personnel at all levels and as required by the services and in alignment with ANA’s strategy. The HR department is regularly investigating the internal needs and changes and adapting the existing HR policy.

The overall staff number has not changed much since 2015 despite an increase in the number of new tasks and obligations and the need for more specific expertise. This trend to hire and train staff with specific skills and expertise will continue as well as special training and competence building of existing staff.



	2015	2016	2017	2018
Total Staff ANS and Admin ¹	136	135	140	148
ATCOs in OPS	50	48	48	50
Staff in AIS, CNS & MET	53	51	53	55

¹ Excluding staff in AER (aerodrome support), ELE (electro-technical) and SIS (fire-brigade & rescue service which is now integrated into CGDIS).



competence
EXPERTISE STAFF
 TRAINING **TASKS** skills
 HUMAN RESOURCES
PROFESSIONALISM
 air-navigation

ANS KEY PERFORMANCE RESULTS 2017 & 2018

The performance management approach developed and in place since 2014 at ANA ensures a focus on the 'big five' performance areas: Safety, Capacity, Cost-Efficiency, Environment, and Security. They are further broken down in local or service specific performance indicators and specific actions and targets in a full KPI scheme.

The efforts that staff and management have invested in the past period in all performance

areas and measured against the agreed targets have again had its effect in the results achieved.

The table below depicts the major results in performance indicators and targets in the FABEC Performance Plan and local plans.

Since RP2, ANA since is required to be fully compliant with the Performance and Charging Regulation (EU Regulation 390 and 391 of 2013).



Area	Indicator	Target	Results 2017	Results 2018
Safety	Effectiveness of Safety Management	Level 4 in all MO's	Partly achieved (79%)	Partly achieved (80,6%)
	Occurrences reported & rated	100%	Achieved	Achieved
	Severity of occurrences	No CAT A+B	Not achieved (2 incidents)	Not achieved (1 incident)
	Separation infringements	Nil	Not achieved (2 incidents)	Achieved
	Just Culture implemented	All ANSP actions implemented	Achieved	Achieved
Capacity	ATFM arrival delay	0,20 min/flight	Achieved (0,05 actual)	Achieved (0,09 actual)
	Slot adherence	> 80%	Achieved (83%)	Achieved (82%)
	ATFM pre-departure delay	No target set	0,04 min/ flight	0,09 min/ flight
	Total delay (incl. weather)	No target set / no	0,12 min/flight	
	CRSTMP ¹ delay	incentive scheme in place	0 min/flight	0 min/flight
Cost - Efficiency	Cost-efficiency (terminal ANS)	Continuously reduce terminal costs	Plus 0,2% increase of total costs in real terms from 2016 to 2017	Minus 0,4% reduction of total costs in real terms from 2017 to 2018
	Cost-efficiency (En route ANS)	Determined Unit Cost (DUC) 2016-2017 & 2017-2018	Minus 2,4 % reduction of total costs in real terms from 2016 to 2017	Minus 0,4% reduction of total costs in real terms from 2017 to 2018
Environment	Vertical flight efficiency	Implementing CDOs	12 CDOs implemented by mid-2018	Further CDOs implemented
	Additional taxi-out time	Reduce extra time (no target set)	+2,25min/flight	+1,46 min/flight
Security	ANS security	ANS Security Management System	Developed / Implemented	Implemented with chip access for ANA headquarters
	Cyber-security	Access control system	Implemented	
		Initial Test (EUROCONTROL)	Passed	Passed Cyber security audit done by Eurocontrol expert with NSA.

¹ CRSTMP stands for: Capacity, Routing, Staffing, Technical ATC equipment, Airspace Management, Special events (weather excluded)

The results indicate good success overall in all areas for both reporting years. A detailed view in all aspects as per service or department during the annual performance review meetings in spring helps to identify areas for further improvements, setting or revising targets, and correcting actions.

ANA documents the KPIs in the Annual Plan (here the AP 2017-2018 is relevant).



TECHNICAL DEVELOPMENTS

The Communication, Navigation, and Surveillance (CNS) Services at ANA are responsible for technical implementation, maintenance of COM, NAV, SUR equipment and manage the technical realisation of respective projects.

The main developments were the finalisation of the A-SMGCS infrastructure. Level 1 of the system has been integrated and is now operational.

The terminal radar system had reached the end of the lifecycle and is not fully compliant with the requirements of EU Regulation 1207/2011. The launch of a full update of the surveillance system was therefore an important step. It is expected that ANA will have an operational new system in place by Q3 - 2019 the latest.

In 2018 ANA achieved the full compliance in regard to the 8.33 kHz split of all frequencies with the replacement of new 8.33 kHz capable equipment: Directions finder, emitters (receivers and antennas, main VCS, and fall-back radio. eTOD data was collected and the required SW installed in AIS / OPS which will manage the system in future).

The technical infrastructure for power supply was further improved. A new technical building for main and supplementary power supply is now available. A new Technical building for CNS, delayed for some time, is now also ready for use. The building hosts the new network servers and provides contingency facilities for CNS.

The CNS Services are now fully responsible for all CNS related projects in the future. A close coordination with program management and the finance department is ensured.



requirements NETWORK
TECHNICAL A-SMGCS
INFRASTRUCTURE
TERMINAL-RADAR-SYSTEM
POWER-SUPPLY
contingency

AERONAUTICAL MET



MeteoLux, the provider of aeronautical meteorological services within ANA is compliant with the relevant ICAO standards applicable to aeronautical MET services at a high level of service quality and integrity.

In 2017–2018 MeteoLux finalised the implementation of a lightning detection system, replaced the ceilometers on the airport and finished the MeteoFactory project.

MeteoLux is a partner of the MET Alliance with other partners in FABEC to share competence and experience in all areas of MET services provided.



SAFETY

The Certification (CERT) Department is responsible for Safety Management, for managing and monitoring the safety issues, and managing the occupational health and safety at ANA as the ANSP.

Regular Safety Committee meetings between the safety management structures in place in ATC, CNS, MET, and ELE ensure close contact, information exchange, and coordination of all safety and quality items.

The Effectiveness of the Safety Management System (EoSMS) in the five Management Objectives has further increased in line with FABEC targets.

	Management Objective	FABEC Target 2017	ANA 2017 Results	ANA 2018 Results
01	Policy & objectives	75%	50%	63%
02	Risk management	75%	75%	75%
03	Safety assurance	75%	75%	75%
04	Safety promotion	75%	75%	75%
05	Just Culture	50%	50%	50%

ATC & ATM GROUND SAFETY

ANA continues to classify all occurrences using the RAT methodology.

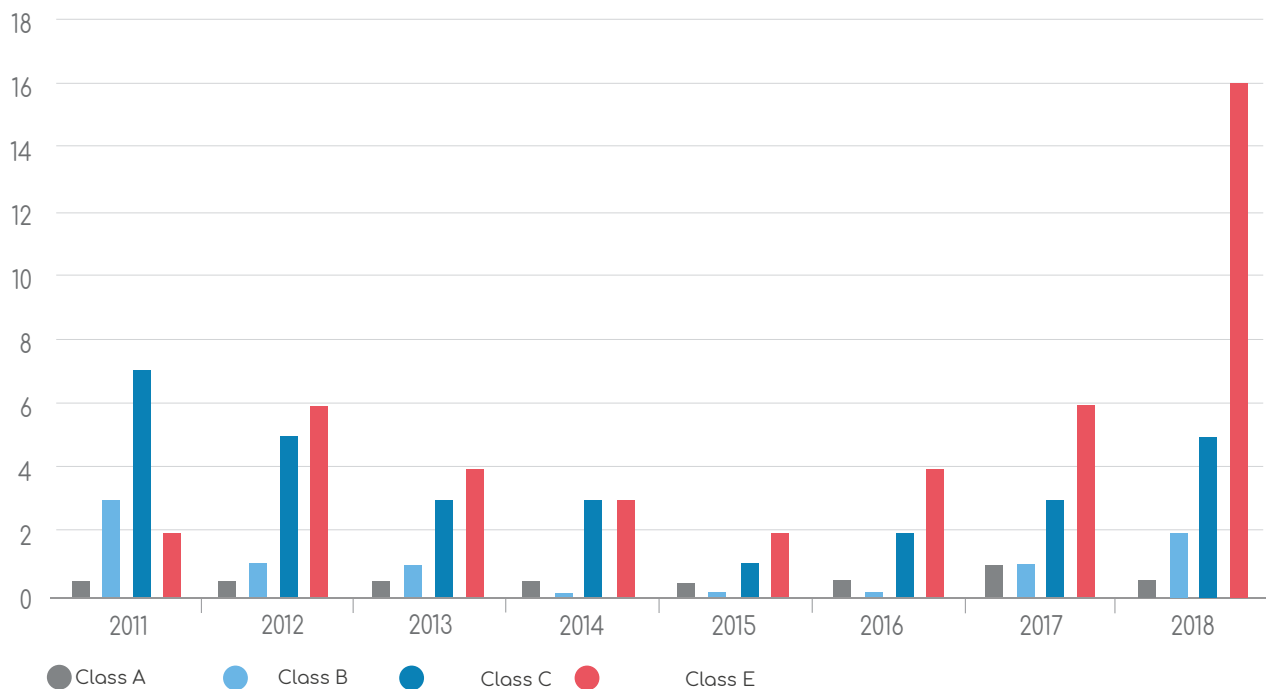
One serious (Class B) incident happened in 2018 (TCAS RA in a glider area).

Class C and E occurrences are not safety critical but are 'early warning' indicators for issues existing and should not be neglected.

The number Class C and E incidents in 2017 is still small. In 2018 Class C incidents are still low, but the number of Class E is up. This is related to the Gilder airspace and SID confusions which are in the process of being mitigated in 2019.



The figure below shows the trend since 2011 up and to including 2018 on 'ATM Ground contribution to ATM incidents'.



A similar pattern can be observed in the ATM Ground contribution of specific (technical) events (ATM SE):

In 2017 ANA had no Class AA, one Class A and 2 Class B occurrences. Several Class C and E cases were due to outages of equipment (indication of need for replacement).

There were no RWY or TWY incursions/excursions in 2017 to which ATC contributed.

In 2018 ANA had 1 class A, 2 Class B occurrences and an increasing number of Class C and E cases.

Also in 2018 there were no RWY or TWY incursions/excursions with direct ATC contribution.

MANAGEMENT OF SAFETY RISKS

The highest goal of ANA is: to perform and provide its ANS effectively and efficiently as well as limiting the risks of accidents and serious incidents by employing all available means that are in its powers. This goal has priority against all other business, economic, or environmental demands and requirements.

ANA operates a proactive safety management system that aims to identify safety risks early and to limit, mitigate, or avoid these risks. All means and measures are documented and are regularly updated.

With every change in the ANS system ANA investigates the potential for related risks and develops appropriate actions against those risks and documents the outcome.

The safety level and the means in place at ANA are subject to internal and external audit and investigation.

Safety surveys and audits are also performed in the frame of FABEC and the ANSP partner organisations in FABEC through the International Audit Cooperation Team (IntACT).



CAPACITY

Luxembourg terminal airspace and aerodrome capacity still has no capacity shortfall: The national target on arrival ATFM delay has been fully met since beginning of RP2 with an average of 0,05 min/flight in 2017 and 0,09 min/flight in 2018.

Similar the ATC related pre-departure delays are at a low 0,08/0,04 min/flight for airline/airport delays in 2017 and 0,18/0,09 min/flight in 2018 for the airline/airport delay.

The additional taxi-out time in 2017 was also at a low level (2,25 min/flight) mostly affected by some extreme winter weather days; in 2018 the extra time for taxiing was 1,46 min/ departure.

The average additional time in terminal airspace (ASMA) has continuously increased since 2015 and was 0,82 min/flight in 2017 up from 0,61 min the year before and 0,56 min in 2018.

Luxembourg has no incentive scheme on CRSTMP causes in place. However, ANA follows the trends in all causes including weather.

The average delay (terminal traffic) in all delay categories was low (0,11 min/ flight) and remains at a low level (0,12 min/flight) in 2017 and 2018.

The main cause for delays were due to weather.





In conclusion:

ANA had no delays in any of the CRSTMP categories during 2017 and 2018 for which ANA could be held accountable.

The adherence to the slots assigned is sufficient to stay in line with the EU Reg 255/2010 on ATFM with an annual average of 83 % of slots in 2017 and 82% in 2018. ANA is not a slot regulated airport (class 3). As class 2 airport slots are facilitated during busy periods. ANA acknowledges that there is room for improvement in slot adherence in future.



Acting Deputy Director, Cos Rausch:

"The need and commitment to improve the coordination between the various partners on the ground and in operations is one important step forward."





ENVIRONMENT

ANA spends time and money to protect the environment and designing a sustainable approach for the management of air & ground movements of aircraft in respect with the environment. With the increase in traffic movements and with it a growing negative mood of residents going public and raising alarms, just proposing clever marketing of 'environmental projects' was not an option. What was needed was a fundamental change of culture in ANA, the Ministry, the airport operator, airlines and the residents. The most important input was therefore for ANA to take the role as the mediator and going into intense and time-consuming discussions and negotiations with all stakeholders to improve and rebuild good relations and a stable dialogue environment for all parties. For these continuous efforts including internal and external resources for gathering, compiling and disseminating environmental information and data, preparing and running meetings and managing follow-ups of agreed actions, a total of 1,5 Full-Time Equivalent is employed.

The most important ATC related environmental factor for ANA is vertical flight efficiency, i.e. the implementation of Continuous Descent Operations (CDO) in Luxembourg approach.

The CDO procedures developed and put in place at the beginning of 2018 were tested with some airlines before final endorsement and implementation. This is in place since 2018 for incoming flights and is used by more than two-third of all flights with substantial, measured reduction in emission (fuel burned) and noise. CDO approaches show a reduction of 15% in noise, 11.6% reduction in NOX emission and 1.5% reduction in fuel burn. Twelve CDOs were implemented in 2017 and 2018; practically for all incoming flights pilots can be cleared for CDO from any point and any altitude to one of four main points in Luxembourg airspace.

The average additional taxi-out time / flight at Luxembourg airport could be reduced in 2018.

The average additional time in terminal airspace for arriving aircraft could be further decreased in 2018 to 0,56 min/flight.

Additional possibilities for the implementation of environmental measures are continuously under investigation in all areas of ANA. In 2018 ANA started a project to implement Performance Based Navigation (PBN) and RNP approach service with vertical guidance. This allows to design and implement new standard procedures for landing, to





abate and decrease noise, and avoid densely populated areas in the airport vicinity.

The charging scheme includes environmental factors to honour the use and implementation of quieter and fuel saving aircraft engines and promoting the use of less disturbing departure times in terms of noise. Both factors helped to bring down the number of night flights (departures after 23:00) since 2017 by 3% whilst a 6% increase of total traffic is observed in the same period.

On 2018, a Charta "Against the noise" was signed between ANA and Cargolux to limit the number of night flight, engine run-ups, and to promote best practices for protecting the environment. Furthermore, ANA is putting a high priority on the dialogue with neighbouring communities. Regular meetings for open exchange are organized and a contact point on ANA's web page is available for resident complaints.

ANA launched with the support from the Ministry a study aiming to find a new location on the aerodrome for aircraft engine tests using specific designed devices for noise attenuation. The goal is to reduce noise exposure of the neighbouring communities during high-power test that create maximum noise. Again, a proper balance has to be found between resident wishes and the operational and technical needs of all airport partners.

The information, dialogue, and consultation framework with adjacent communities about plans and issues regarding the aerodrome environment impacts was further strengthened in 2018.

Citizen now have more opportunities to get information on noise, on projects and plans on environmental matters, and access to directly complain via the ANA website and contact details.

ANA is a key player in managing a collaborative platform with citizen, airlines, Luxembourg airport and other operators, fostering frequent exchanges and forums promoting a sustainable approach and balancing economic objectives and expectations of citizen.

Since 2017 ANA and its environmental policy is ISO 14001 (environment management) certified. A full set of environmental targets and actions form part in the overall portfolio of 'Key Performance Indicators' (KPIs) that address a full range of environmental measures. ANA is in addition committed to implement the measures and requirements of EMAS (eco-management and audit scheme), according EU Regulation 1221/2009 and amendments, and adopted an integrated Environmental Management System (EMS) devised in seven pillars: Noise, Air Quality, Water & Ground Quality, Waste, Biodiversity, and Natural Resources. All projects are subject to initial and detailed assessment for environmental impacts.

ANA works in close cooperation with the flora and fauna with its EMS pillars, not only as the entity responsible for wildlife on the airport. In ground operations ANA aims to reduce the time of aircraft manoeuvring (for example taxiing out) or waiting with engines running to reduce CO2 emissions and noise. Since 2018 ANA is purchasing new cars exclusively with plug-in hybrid respectively full electrical technology and reduced the average emissions of the car fleet



from 149 g/km in 2016, to 135 g/km in 2019 with further improvements expected. ANA is also responsible for the airfield ground lighting and is using LED technologies. Today ANA is already using 67 % of the lights with LED technology on the taxiways and reducing power consumption by 100kW/h; the aim is to have 100% LED based lighting technology in future.

ANAs EMS is embedded in the performance management system and has the full commitment from ANA management, its personnel and other stakeholders: the Ministry, major Luxembourg airlines, the airport operator luxAirport and local resident associations.

An increasing number of statements and policies on Environment are set up and agreed. ANA Environmental Policy underlines this clearly "ANA [...] will seek to implement all measures and best practices to reduce its environmental impacts and improve its environmental efficiency while considering economic and sustainability aspects".

ANA strives for sustainability of actions with a long-term view. New procedures (e.g. CDO) will have significant long-term impact on noise and emissions and new equipment (LED lights on runway and taxiways, electric cars, ...) are purchased based on environmental criteria to be in operation for a long period.

In addition, the ISO 14001 certification requires to have a process of continuous improvement in place and to maintain the good results achieved. Our sustainable approach is demonstrated during external audits and communicated in annual reports and in the internal reporting system.

COST EFFICIENCY - ANS COSTS & UNIT COSTS

En-route Cost

Our partner skeyes is the ANSP for the provision of En-route (ER) services in the common charging zone (Brussels FIR) for Belgium and Luxembourg.

The upper airspace is managed by MUAC.

Belgium and Luxembourg form a common charging zone for En-route (ER) services in which Luxembourg and Belgium provide their respective cost parts in full transparency in separate cost tables.

The actual total costs (by nature / service) in 2017 for the Luxembourg ANSP cost part in the ER ANS of Belgium and Luxembourg was 6,176 M€ down from 6,192 M€. This is a minus 0,3% reduction of overall cost and minus 2,4 % in real terms in 2017. The costs for 2018 were 6.291 M€, an increase of 1,9%.

The Unit Cost part for Luxembourg ANA in the total ER charge of 67,5 € per Service Unit in the common charging zone 2017 was 2,06 € down from 2,19 € in 2016 and 2,01 € in 2018 (- 2,3%).

There was some extra cost increase in staff costs due to shift of cost for contractors into the staff cost category. The increase in staff cost was compensated by lesser operating cost and cost of capital.

Luxembourg State does not charge users the capital costs, and the cost of depreciation of investments in the ER charges. These costs are offset through an equivalent amount in 'Other Revenues'.





En-route Revenues

After deductions of over-recoveries and carry forwards from past years and further reduced by 'Other Revenues' for depreciation and capital costs borne by Luxembourg State, users were charged a final sum of 5,477 M€ for ANS provision of ANA in 2017 in the common charging zone.

These costs translate into a per service unit rate for 2017 of 2,12 € and 2,32 € for 2018 for the ANSP cost part.

The amount actually recovered through the EUROCONTROL route charges system to Luxembourg for the services provided by ANA in 2017 was 7,540 M€ and 8,073 M€ in 2018.

Terminal Costs

The actual total cost (by nature / service) in 2017 for the Luxembourg terminal service was 11,910 M€ compared to 12,027 M€ planned costs for the same year.

The actual costs 2018 for terminal ANS was 12,102 M€ down from a total of determined costs for the same year of 12,293 M€.

Terminal Charging & Revenues

ANA is the ANSP in Luxembourg and provides approach (APP) and aerodrome control (TWR) services in Luxembourg airspace and on the airport.

ANA does not apply a traffic risk sharing scheme for its terminal services. ANA reimburses users all over-coverage due to an increase in the number of terminal service units.

ANA operates a terminal ANS charging scheme (TNC) for departures from Luxembourg airport with a modulation of the charges according EU Regulation 391/2013 Art 16¹. The general factor in the modulation formula is the Maximum Take-off Weight (MTOW).

Besides MTOW, the scheme honours the efforts of airlines to use equipment that emits less noise and using departure times that are less disturbing to the neighbourhood.

The first factor (E) concerns a classification of aircraft according to their total noise emission in four noise categories.

The second factor (D) concerns the departure time in three categories with the highest factor for departures after midnight.

ANA calculates the charges due and bills users through its own charging and billing office. After closure of the billing year, ANA calculates the traffic and modulation effects that have accrued throughout the year and carries full amount of over-coverage (compared to the determined Unit Cost (DUC)) directly to users in the following year (n+1).

ANA has steadily improved its internal finance processes by adopting rules and procedures for improved cost control in major projects.

ANA's costs and unit rate for the provision of terminal ANS are reported in separate cost tables for TNC. The charging scheme for TNC is in accordance with the EU charging regulation.

¹ The scheme is in operation unaltered since beginning of RP2 (2015).

The figures in the following table are the ones for the terminal services only (ANSP costs) and show the trend since 2015 onwards. The 2019 costs and charges are added to show the further downward trend in Unit Cost charged in the coming year.

(in K€)	2015	2016	2017	2018	2019
Total determined costs	10 868	11 725	12 027	12 293	12 487
Inflation adjustment			-186	-402	-382
Traffic adjustment			63	-515	-1 383
Adjust. Determined costs	10 868	11 725	11 904	11 377	10 721
Other revenues	-1 529	-2 061	-2 034	-1 766	-1 568
Remaining costs (chargeable costs)	9 339	9 664	9 870	9 610	9 153
Total Service Units (forecast)	41,3	43,0	44,7	46,9	49,0
Unit Cost (in €/SU)	226,00	224,80	220,64	204,92	186,63

The next table gives the ANS cost in real term based on the actual cost out-turn for 2017 with the actual service units in 2017. It shows that the final cost and charges for users in real terms and the actual unit cost in nominal terms.

The last row gives the planned vs the actual investments made by ANA in 2017. It shows that the planned and actual Capital Expenditures (CAPEX) are in line.

	2017 actuals	2018 actuals
Total DUC (real terms) for terminal services (€M)	10 374	10 334
Traffic service units (SU's) (in .000)	50,9	54,4
Unit costs in real term (per SU)	203,79 €	189,97 €
Investments (€M) (total En-route & terminal - 'gate-to-gate'- planned vs. actual CAPEX) (€M)	4,5 / 4,0	2,8 / 6,1

Note: Figures represent the costs for ANS only without the NSA cost part.





STAKEHOLDER CONSULTATION

In 2017 and 2018 ANA maintained the close coordination and held meetings regularly with all stakeholders at various levels. Of high importance are the ADIM coordination meetings with DAC, the national supervisory authority in Luxembourg. These meetings address all safety and other regulatory issues in time and finding appropriate responses to upcoming issues and audits.

The increasing importance of environmental issues on and around the airport, triggered also by increasing traffic and movements on the ground and in the air, required appropriate and lasting actions and measures. This was achieved through regular dialogue and information sessions with neighbouring communities and citizen.

Our present Ministry was consulted for coordinating and agreeing on the correct managerial response to the changes and the respective financial implications. In this regard the high investments planned in ANA for 2019 onwards are to be mentioned.

Airport users are a fourth group requiring close consultation and reporting. The annual Airport User Committee meeting (AUC) in autumn gives users a full overview on new developments and plans from an ANS and aerodrome perspective. The financial outturn and terminal ANS charges are reported and explained with the charges calculated and to be levied in the forthcoming calendar year in focus.

ANA participates in regional user consultation meetings and attends the Enlarged Committee meetings (CRCO) with users and other ANSPs

FINANCIAL SITUATION 2017 AND 2018

The following tables give the accounts and financial situation of ANA for the calendar year 2017 and 2018 as from the externally audited Annual Account 2018.

2017 Results

The 2017 accounts give a consolidated view of ANA's financial performance and show robust results and positive outturn. ANA stayed within the agreed budget lines and cost base.

The substantial increase in terminal traffic service units led to a significant increase in ANS revenues in 2017, the excess above determined costs will be returned in full to users in 2019. The modulation of the terminal charges in accordance with Art. 16 of EU Regulation 391/2013 charges has again demonstrated to be also financially beneficial for users.

The total budget / project and forecast spending for the years 2017 – 2021 – as they were established at that time – is provided in the BP 2017 – 2021.

The BP is subject to an update planned in 2019.

2018 Results

The 2018 accounts give a consolidated view of ANA's financial performance.

The substantial increase in terminal traffic service units led to a significant increase in ANS revenues in 2018, the excess above determined costs will be returned in full to users in 2020.

ANA delivered in the FABEC Performance Plan (FPP) in 2018 an updated investment plan following the high level stakeholder decisions for the remaining years of RP2.

BALANCE SHEET AT 31 DECEMBER 2018		31.12.2018 / EUR	31.12.2017 / EUR
A. Capital and reserves			
I. - Subscribed capital		5.550.087,48	5.550.087,48
III. - Revaluation reserves		272.303,00	272.303,00
V. - Profit or loss brought forward		22.288.992,21	26.941.628,63
VI. - Result for the financial year		-9.966.626,10	-4.652.636,42
VIII. - Capital investment subsidies		30.346.847,49	23.231.527,54
TOTAL (CAPITAL AND RESERVES)		48.491.604,08	51.342.910,23
B. Provisions			
3 - Other provisions		4.924.153,74	1.481.250,11
TOTAL (PROVISIONS)		4.924.153,74	1.481.250,11
C. Creditors			
4 - Trade debtors			
a) becoming due and payable after less than one year		6.026.961,68	2.825.268,60
8 - Other creditors			
a) Tax authorities		1.584.841,04	859.171,53
TOTAL (CREDITORS)		7.611.802,72	3.684.440,13
TOTAL (CAPITAL, RESERVES AND LIABILITIES)		61.027.560,54	56.508.600,47
ASSETS			
C. Fixed assets			
I. Intangible assets			
2 - Concessions, patents, licences, trade marks and similar rights and assets if they were			
a) acquired for valuable consideration and need not be shown under C I-3		309.886,45	365.138,78
b) created by the undertaking itself		914,07	1.332,35
4 - Payments on account and intangible fixed assets under development		1.769.704,35	759.535,63
		2.080.504,87	1.126.006,76



BALANCE SHEET AT 31 DECEMBER 2018	31.12.2018 / EUR	31.12.2017 / EUR
II. Tangible assets		
1 - Land and buildings	721.664,98	182.599,42
2 - Plant and machinery	8.939.956,19	8.539.543,04
3 - Other fixtures and fittings, tools, equipment and motor vehicles	7.201.010,18	7.383.250,32
4 - Payments on account and tangible fixed assets under development	11.624.056,59	6.294.790,02
	28.486.687,94	22.400.182,80
TOTAL (FIXED ASSETS)	30.567.192,81	23.526.189,56
D. Current assets		
I. Stocks		
1 - Raw materials and consumables	893.655,03	723.379,15
	893.655,03	723.379,15
II. Debtors		
1 - Trade debtors		
a) becoming due and payable after less than one year	1.979.427,01	2.509.985,54
	1.979.427,01	2.509.985,54
IV. Cash at bank and in hand	27.012.814,19	29.472.724,02
TOTAL (CURRENT ASSETS)	29.885.896,23	32.706.088,71
E. Prepayments and accrued income	574.471,50	276.322,20
TOTAL (ASSETS)	61.027.560,54	56.508.600,47



PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING 31 DECEMBER 2018	2018 EUR	2017 EUR
1. Net turnover	18.797.224,61	18.497.303,52
4. Other operating income	9.186.738,48	11.811.459,47
5 - Raw materials and consumables and other external expenses		
a) Raw materials and consumables	-2.044.293,96	-2.166.336,12
b) Other external charges	-11.242.470,50	-7.248.407,90
6. Staff costs		
a) Wages and salaries	-17.599.550,85	-18.360.314,21
b) Social security costs		
i) relating to pensions	-243.970,65	-189.994,63
ii) other social security costs	-856.242,95	-921.550,96
7. Value adjustments		
a) in respect of formation expenses and of tangible and intangible fixed assets	-2.471.024,43	-2.328.780,24
b) in respect of current assets	96.338,91	-38.678,45
8. Other operating expenses	-3.590.193,97	-3.709.650,98
11. Other interest and other financial revenues		
b) other interest and similar financial revenues	911,51	2.626,65
14. Interests and other financial costs		
b) other interest and financial costs	-92,30	-312,57
16. Profit or loss after taxation	-9966.626,10	-4.652.636,42
18. Profit or loss for the financial year	-9966.626,10	-4.652.636,42





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DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de la Mobilité
et des Travaux publics

Administration de la navigation aérienne



Administration de la
navigation aérienne
4, route de Trèves
L-2632 Findel



Adresse postale :
Administration de la
navigation aérienne
B.P. 273
L-2012 Luxembourg



Tél. : (+352) 4798-22000
(centrale téléphonique)
E-mail : info@airport.etat.lu



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