

# ANNUAL REPORT 2020



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## Key results

| SELECTED PERFORMANCE INDICATORS                      | 2019    | 2020            |
|------------------------------------------------------|---------|-----------------|
| Number of en route flights ('000)                    | 912     | <b>377</b>      |
| Number of controlled IFR flight hours ('000)         | 512     | <b>221</b>      |
| Number of terminal operations ('000)                 | 444     | <b>194</b>      |
| Average en-route ATFM delay (min/flight)             | 0.12    | <b>0.00</b>     |
| Employment (in persons at the year end)              | 1,979   | <b>1,912</b>    |
| Employment - ATCO in OPS                             | 591     | <b>597</b>      |
| Total sales revenues ('000) PLN                      | 951,294 | <b>771,342</b>  |
| Revenue from en-route navigation services ('000) PLN | 798,019 | <b>625,258</b>  |
| Revenue from terminal navigation services ('000) PLN | 130,823 | <b>122,385</b>  |
| Profit / <b>Loss</b> on sales ('000) PLN             | 23,851  | <b>-114,272</b> |
| Net Profit / <b>Loss</b> ('000) PLN                  | 11,171  | <b>-86,166</b>  |

# Foreword

## Ladies and gentlemen,

Today there is no longer any doubt that 2020 was an extraordinary year. A coronavirus pandemic caused aviation to experience its biggest traffic slump since World War II. In 2020, Polish ATCO's handled only 365,000 IFR operations – almost 59 % less than in 2019. On the other hand, a significant increase in traffic was recorded in general aviation – Flight Information Service (FIS) officers supervised more than 277,000 General Aviation operations, 6 % more than last year.

The Chinese word for crisis also means opportunity. This is how PANSA has treated the slowdown in its operations. In 2020 we have set our sights firmly on preparing and testing innovative solutions created thanks to the unique knowledge of our specialists in modern technologies. We are aware that the aviation world after the crisis will not be the same as before. But we will be ready to meet the requirements of the new normal and to be at the forefront of European air navigation agencies.

In early March, the PansaUTM drone flight coordination system was launched operationally at Polish airports. It was a milestone for the development of the drone industry in Poland. This is the first system in Europe which enables drone operators to contact ATC services, provides real-time visualisation of the drone's location and information on basic flight parameters. This allows PANSA personnel to assess whether a drone flight can take place safely and grant permission for the operation directly to the drone operator.

Times of crisis are not only about drone technology. In May, a new system was implemented at control towers of Polish airports which ended the era of paper progress strips. Electronic Flight progress Strips (EFES) is a new generation digital tool providing controllers with the most important information about flights and thus reducing their workload by greater situational awareness.

In June 2020 we opened the Air Traffic Control Centre (OKRL) in the vicinity of Poznań-Ławica Airport. The completed facility will be equipped, among other things, with a system of remote towers and will use technologically advanced solutions for video and audio transmission, in addition to the conventional ATC tower. Thanks to this solution it will be possible to provide ATC services at Solidarity Transport Hub without physical presence of the ATCO at the airport.

In October 2020 at Chopin Airport we launched the Airport Collaborative Decision Making system, providing a smooth and efficient exchange of information between air traffic services, ground handling agents and airlines. Thanks to the inclusion of the system in the European network, it is possible to optimise air traffic planning in the European sky. A-CDM was created together with Chopin Airport, in cooperation with LS AS, WELCOME AS and LOT Polish Airlines.

The first year of the crisis in aviation sector coincided with the 100th anniversary of ATC services. It was exactly in 1920 that the first air traffic control tower was set up at Croydon Airport near London, where controllers would ensure the smooth air traffic. Due to the pandemic the celebration of the 100th anniversary of ATC was cancelled, but the largest European ANSP associated in the A6 Alliance under my leadership, prepared a jubilee exhibition telling the history on European air traffic control. The exhibition was officially opened at Warsaw Chopin Airport and its digital version is available online by the European partners of PANSA.



A stylized handwritten signature in black ink, consisting of a large 'J' followed by a horizontal line and a small flourish.

**Janusz Janiszewski**

– Acting President of the Polish Air Navigation Services Agency

## Organisational structure



# Organisational structure



## Organisational structure of the Polish Air Navigation Services Agency as for 31 December 2020

### The President's Division

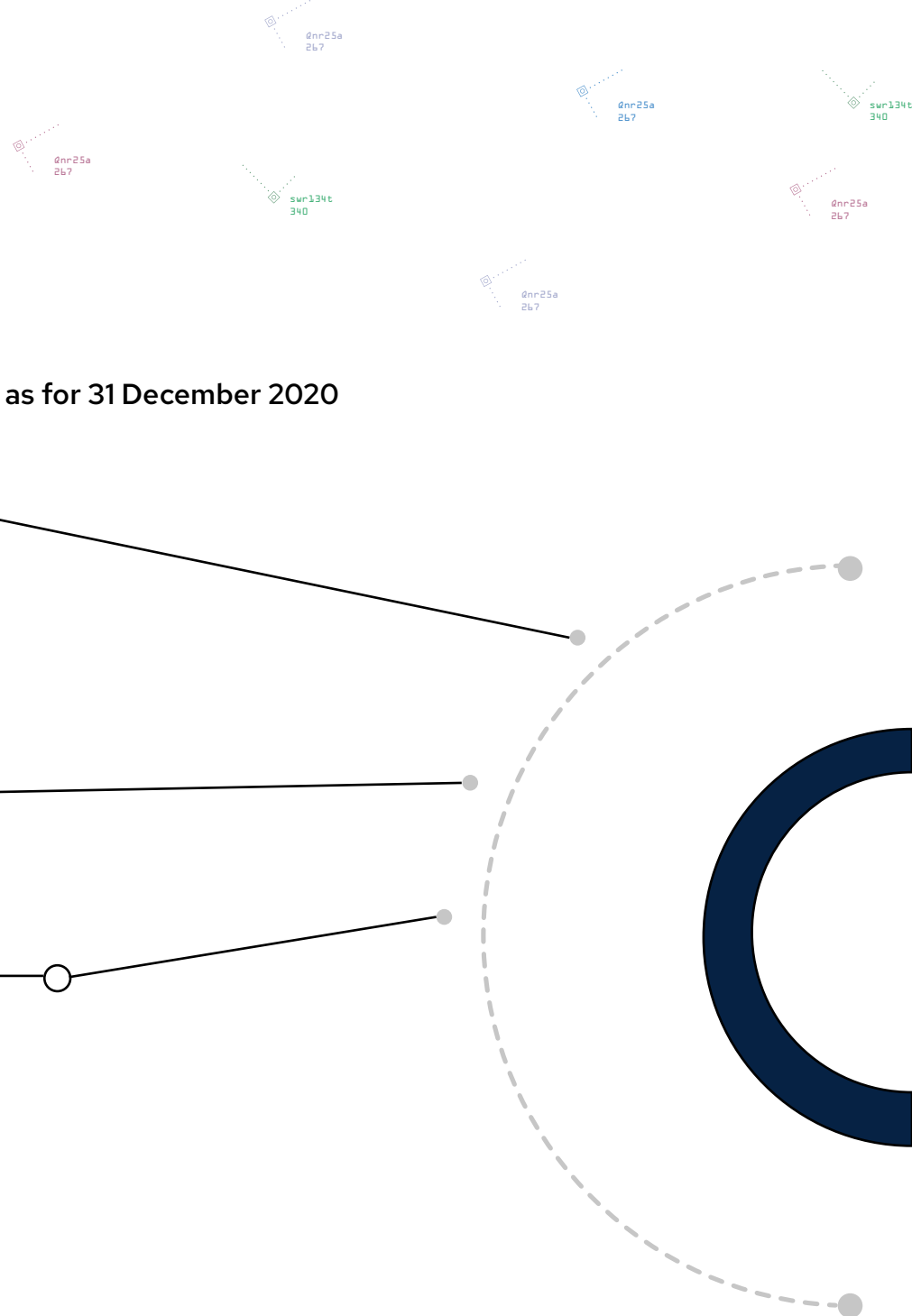
- President's Office
- Strategy and International Affairs
- Purchasing
- Safety and Security
- ATC Training Centre
- Project Management

### Division of the Vice-President for Air Navigation

- ATM Operations
- IT and CNS

### Division of the Vice-President for Financial and Administrative Matters

- Finance and Accounting
- Chief Accountant
- Administration



## Mission:



Providing safe and seamless air traffic by means of effective management of airspace

## Vision:



The organisation with a strong position in the European market for air navigation service providers

Innovative organisation, investing in knowledge and development

The organisation that bridges the gap between Eastern and Western Europe in the area of staff and service provision

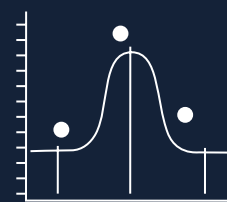


# Implementation of the PANSA strategy

## KEY PERFORMANCE AREAS:



Safety - ensuring and maintaining air traffic safety



Capacity - ensuring the required airspace capacity and air traffic services while minimising delays



Environment - ensuring sustainability of air navigation services while minimising the negative impact on environment, reducing the pollutant emission and minimising the noise



Cost efficiency - providing high quality of services at a reasonable price that allows the agency to develop and strengthen the company's financial stability

## Operational and technical objectives:

- ATM system development
- Development of ATFCM/ASM functions
- Ensuring ANS continuity
- TWR systems development
- Development of traffic management systems for unmanned aerial vehicles



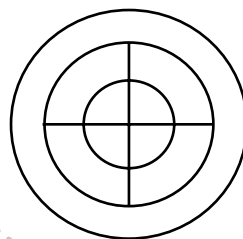
## Business objectives:

Business objectives are a set of activities and initiatives aimed at strengthening the organisation's position in its domestic and international environment, including enhancing financial security through revenue diversification:

- The Polish Air Navigation Services Agency among the key air navigation service providers (ANSPs) in Europe
- Provision of Business to Business (B2B) services
- Development of research and development activities

## Relations with partners:

- Stakeholders
- Partnerships
- Air Navigation Service Providers
- Institutional governance
- Business environment





 Events 2020 



**February**

# Polish PansaUTM system the best drone solution of 2020



The Polish system for flight coordination **PansaUTM won in two categories** of the **ATM Awards 2020** competition, organised by European magazines *Air Traffic Management* and *Unmanned Air-space*. **The Polish Air Navigation Services Agency was awarded the ATM Awards 2020 main prize and won the first place in the 'ANSP UTM projects' category.**

The awards were given by industry experts for its pioneering work in developing the PansaUTM integrated drone system.

**March**

# SARS-CoV-2 suspension of flights



The temporary suspension of international air connections to and from Poland automatically resulted in a large decrease in traffic in Polish airspace compared to the same period in previous years. **PANSA adapted to the decisions of the Polish and European aviation institutions in a flexible manner.**

# PARROT to help in the fight against coronavirus



A specialised PANSA aircraft has been used to help the government fight the coronavirus outbreak. According to the decision of Acting President Janusz Janiszewski, the L-410 UVP-E 15 „Turbolet” aircraft, registration no. SP-TPA („Parrot”), together with a specialised crew, was used for rapid transport of personal protective equipment and disinfectants between establishments throughout the country.

**April**

## The drones to help in the fight against the pandemic

Poland's first drone flight with a transport module took place in Warsaw, carrying sample tests for the SARS-CoV-2 virus. It is a big step towards the practical use of drones to help in the fight against coronavirus. It proves the development of the Polish drone industry, which is ready to implement an innovative drone transport services in cities and between cities.



## EU millions for digital drone revolution

Digital, in mass, safer - in three words, this is the project worth almost PLN 61.5 million of three state institutions - the Polish Air Navigation Services Agency, the Ministry of Infrastructure and the Civil Aviation Authority. This is another step towards a digital revolution in drone flight operations. The funds are in 85% financed directly from the EU budget. The leader of the project entitled „Digital services for unmanned aerial vehicles” is the Polish Air Navigation Services Agency, the originator of the PansaUTM system concept. The project, implemented as part of the Digital Poland Operational Programme, consists in mass provision of electronic services enabling efficient and safe „drone” flights to any interested party.

May

## Innovative system helps with the workload of the controllers at Polish airports

The EFES (Electronic Flight progrEss Strips) digital electronic progress strip system is a tool implemented to provide useful flight information and to reduce the workload for controllers. Thanks to the new generation system, personnel in the Polish Air Traffic Control Towers have greater situational awareness, which translates into greater safety and even better efficiency in air traffic management.



## The PansaUTM system implemented at more airports

Successively implemented as of March 2, 2020 the PansaUTM system is the basis for the development of the U-Space concept in Poland, assuming safe and effective integration of manned flights and unmanned aircraft. This is the first and so far the only operationally implemented system in Europe, based on digital coordination of UAV flights and digital management of applications and authorisations for such flights. PansaUTM consists of proprietary operational solutions of PANSA and system part integrated with the most popular mobile application among drone operators in Poland - **Droneradar**. Among other things, the system allows fast, digital, non-verbal communication between air traffic controllers and drone operators.

**July**

## PANSA implements modern technologies under the SESAR programme

The Polish Air Navigation Services Agency actively participates in the SESAR programme, which is the technological pillar of the Single European Sky (SES). The aim is to develop and implement a large-scale harmonised air traffic management (ATM) infrastructure in Europe and other solutions to reduce the fragmentation of European airspace. The Polish Air Navigation Services Agency continues to participate in the implementation of dozens of projects. Several other projects have already been completed, resulting in the effective operation within the Polish and European aviation system.



## September

# Drones to support medical services in the fight against coronavirus

Janusz Janiszewski, Acting President of the Polish Air Navigation Services Agency, and Waldemar Wierzba, MD, PhD, Director of the Central Clinical Hospital of the Ministry of the Interior and Administration, signed a letter of intent on cooperation concerning the use of unmanned aerial vehicles for medical transport.

The coronavirus situation calls for coordinated action to practically test and ultimately implement new solutions that fully exploit the potential of the unmanned aircraft tool.



October

## Polish airport joins the European elite

The Airport Collaborative Decision Making (A-CDM) system, created by the Polish Air Navigation Services Agency and Warsaw Chopin Airport, has been implemented at Warsaw Chopin Airport. A-CDM allows the exchange of information among all aeronautical entities and optimal air traffic planning in the European sky. A-CDM constitutes an advantage for passengers, aviation

operators and the environment as well as a Polish contribution to the improvement of the European network.

Therefore, A-CDM improves the operation of the entire European aviation network and functions based on a smooth and efficient exchange of information between air traffic services, ground handling agents and air carriers, allowing optimal air traffic planning in European skies.





## Parrot will fly to Lithuania again

**November**

# PANSA and 16 European countries strengthen cooperation in aeronautical information management

Smooth flow of operational data in Europe, close cooperation within the Single European Sky and reduction of the negative impact of aviation on the environment constitute the main objectives of the declaration signed with respect to the Aeronautical Information Management (AIM). The AIM Declaration governs a number of important areas of interaction on many levels. It includes, *inter alia*, harmonised implementation of the Single European Sky elements, coordination of publications related to airspace structures, reduction of negative impact of the aviation industry on the environment and digitisation in the field of aeronautical information.

The Polish Air Navigation Services Agency has won the tender announced by Lithuania's Oro Navigacija to carry out a total of six multi-day missions scheduled each year, during which all navigation aids of Oro Navigacija will be tested. Optionally, the Polish Air Navigation Services Agency may also be requested to perform LPV / APV SBAS ground checks using the instrument-based approach and control service procedures applicable at Palanga and Kaunas airports. The contract, effective from November 2020 to May 2023, constitutes yet another example of commitment to mutual cooperation between PANSA and ON in Baltic FAB.

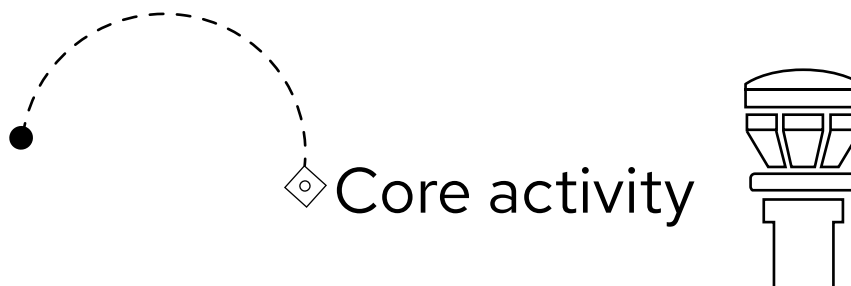


## December

# Poland leads the way in preparing the U-Space environment – NaviSpot coming soon

Poland is currently the leader among the member states of the Single European Sky initiative when it comes to the preparation of the U-Space environment and, in the next five years, the world will be facing a revolution in public transport. The first flights of semi-autonomous VTOL platforms, flying at a distance of up to 100 km, are already planned for 2023. Therefore, the next step of the Polish Air Navigation Services Agency is its new project – NaviSpot, which will create safe infrastructural conditions for the development of a new branch of the economy as well as ensure Poland's place among the leaders of the global drone market.

NaviSpot is a part of PANSA and PSNC initiative – NaviHub – a platform combining knowledge, competences and experiences of institutes, universities, companies and aviation facilities. The aim of NaviHub is to create and test modern solutions for air navigation, which will be used at existing and new airports in Poland.



The Polish Air Navigation Services Agency is a state legal entity responsible for air traffic management within the Flight Information Region (FIR) in Warsaw.

The Agency is the only institution in Poland, which provides air traffic control services within FIR Warsaw.

Air traffic control is exercised at three levels:

- **area control** - area control service - established for the purpose of air traffic control with respect to controlled flights. It is performed by Area Control Centre Warsaw using surveillance radars,
- **approach control** - approach control service - established for the purpose of air traffic control with respect to arrival and departure of controlled flights. In

Poland, four radar approach control units have been established (APP Warszawa, APP Gdańsk, APP Kraków, APP Poznań) to provide services using surveillance equipment,

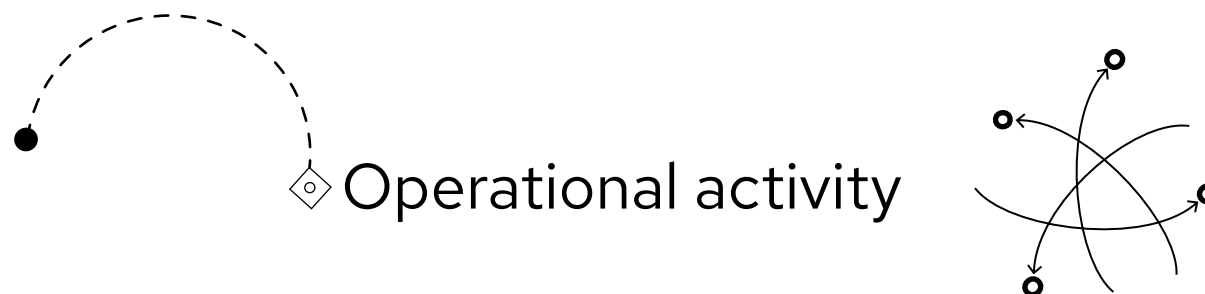
- **airport control** - aerodrome control service - established for the purpose of aerodrome air traffic control. Fifteen aerodrome control units have been established, some of which (TWR EPBY, TWR EPLB, TWR EPLL, TWR EPRA, TWR EPSC, TWR EPSY, TWR EPRZ, TWR EPZG) also exercise procedural approach control.

PANSA also provides **Flight Information Services** (FIS) in uncontrolled space. A flight information unit handles traffic in an area characterised by a considerable diversity of aircraft and users with different levels of skill and experience. The Flight

Information Service provides a viable buffer against violations of controlled space and also plays an important role in the formation of good pilot habits. FIS cooperates with search and rescue (SAR) services within the scope of alerting services.

**In view of the global crisis in aviation and sharp decline in air traffic, the priorities of the Polish Air Navigation Services Agency had to be redefined. The current situation has accelerated PANSA efforts to implement technological solutions, especially in the field of digitisation of processes and systems.**

**The development and implementation of digital solutions is the direction taken by the Agency in the context of post-pandemic challenges, including in particular increased air traffic.**



# Comprehensive airspace management

As part of its efforts to ensure the required airspace capacity (also in the medium and long term, after air traffic recovery), in 2020, the Agency continued the operational development of the PEGASUS\_21 air traffic management system and the STAM (Short Term AT-FCM Measures) space capacity management support system.

The Polish Air Navigation Services Agency undertook activities towards the targeted implementation of P\_21/iTEC in cooperation with leading European ANSPs, both within the currently developed V2 version and the future V3 version.

The work continued to further improve the AMAN (Arrival Manager) tool, which facilitates the management of the landing approach sequence for aircraft to Warsaw Chopin Airport and Modlin Airport.

The implemented in-house PANSA software for airspace management

(CAT 2.0) was used in line with the FRA requirements, while striving to continuously develop the functionality of the application.

The process of evolving POLFRA, the Free Route Airspace, was completed in order to increase its functionality by, inter alia, extending the vertical limits of the FRA, reducing the number of restrictions and thus enabling air operators to perform flights in a variant as close as possible to their preferred trajectory (shortest time, most economic and eco-friendly).

The main operational assumptions were developed as part of the activities in the cross-border FRA implementation project between ACC Warsaw and ACC Vilnius.

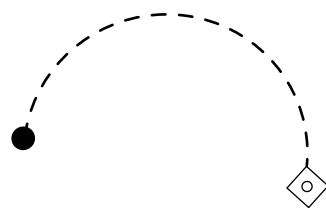
The process of implementation of the Traffic Complexity Tool (TCT), i.e. the tool to support ATFCM management in all its phases, and the capacity management support system - STAM (opera-

tional implementation planned for 2021) was continued.

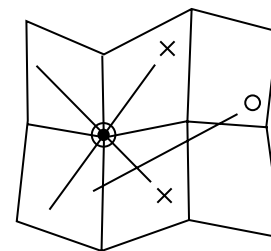
The ACC sector configurations according to the changing traffic flow needs, dynamic capacity management, and traffic scenarios were implemented.

As regards the design of instrument flight procedures, work technology and air traffic control service procedures, the implementation process of the PBN-compliant flight procedures continued in 2020, while maintaining work technology and air traffic control service procedures to enable CDO (Continuous Descent Operations) landing and CCO (Continuous Climb Operations) take-off techniques by aircraft crews.

As part of the aeronautical information, a plan to upgrade the Integrated Web Briefing (IWB) software with a mobile application was implemented and the plan was launched to eventually introduce the digital version of NOTAM.



## Air traffic and delays



In the years prior to 2020, the volume and complexity of air traffic in Polish airspace significantly affected both en-route and terminal delay values.

In 2020, due to the COVID-19 pandemic, there has been a sharp decline in air traffic since mid-March. Only 41% of all 2019 IFR operations were performed in 2020.

The decrease in traffic had a direct impact on the reduction of the route delay indicator, which was 0.00 min/fli-ght in 2020. The target for Poland set in the draft Performance Plan RP3 for 2020 amounted to 0.30 min/flight. At the stage of setting the 2020 target, such a significant and sudden fall in the number of air operations, both in Poland and worldwide, could not be predicted.

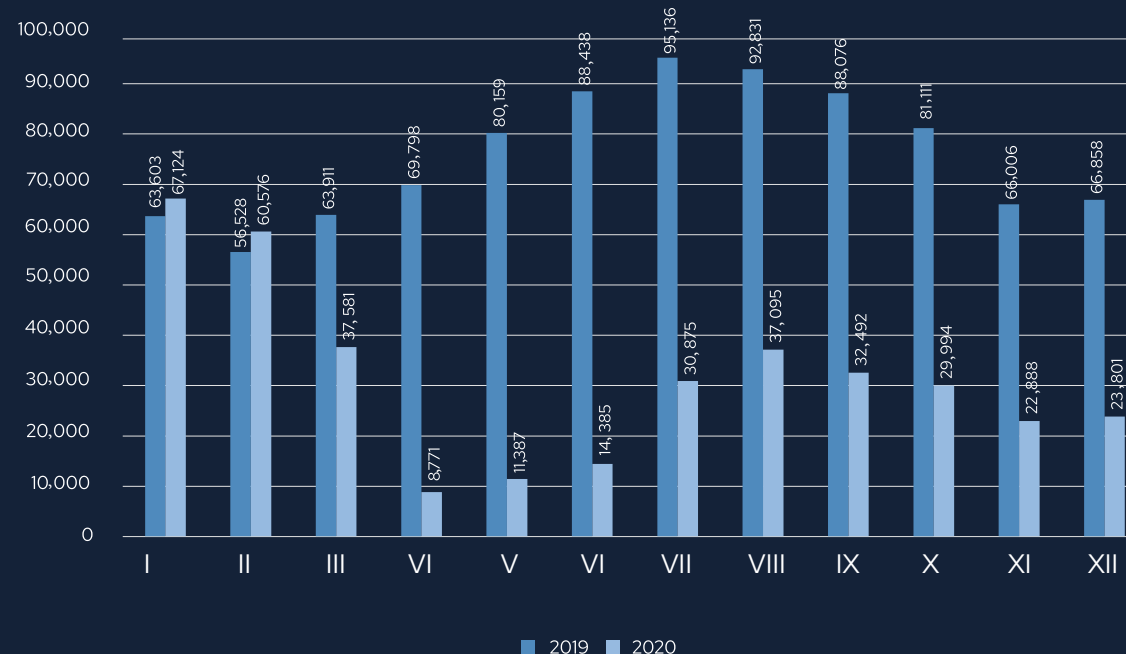
Number of IFR operations in 2020 in Polish air-space:

1. en-route traffic - 376,969 MVS;
2. terminal traffic - 194,403 MVS.

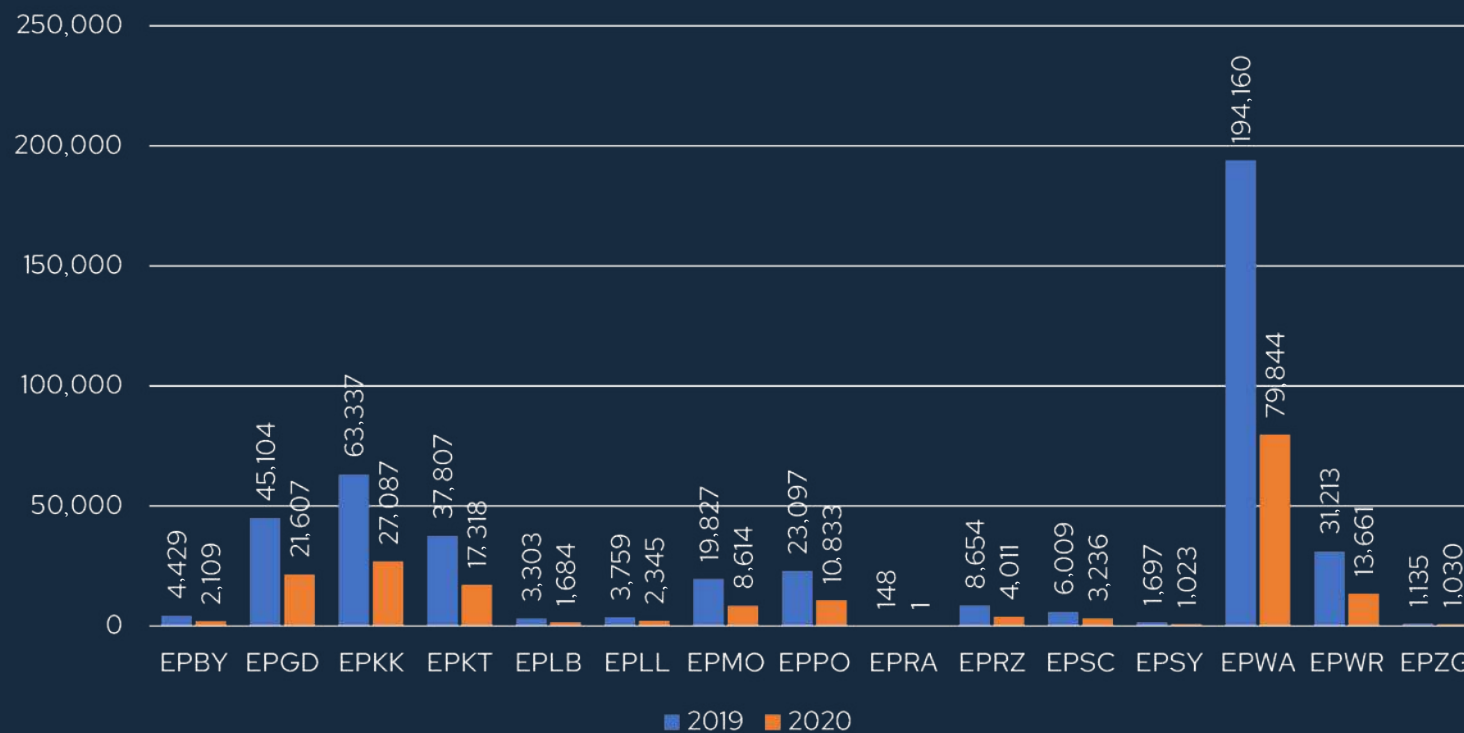
The en-route traffic in 2020 in terms of the number of total operations (MVS) was significantly lower both compared to the previous year and the volumes included in the 2020 Plan, i.e. by 58.7% and by 60.4% respectively. The COVID-19 pandemic, which affected the aviation sector on an unprecedented scale, had a significant impact on this situation.

In 2020, the actual number of en-route service units invoiced to airspace users was 2,115,282 SUs and the number of en-route service units exempted from air navigation charges was 30,529 SUs.

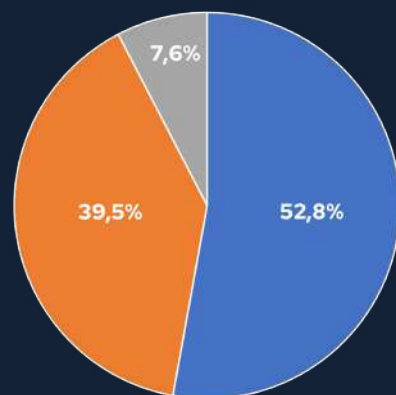
**Fig. 1** Number of en-route IFR operations by month in 2019 and 2020



Source: Own elaboration on the basis of EUROCONTROL/PRU

**Fig. 2** Terminal traffic volumes in years 2019-2020 at individual airports

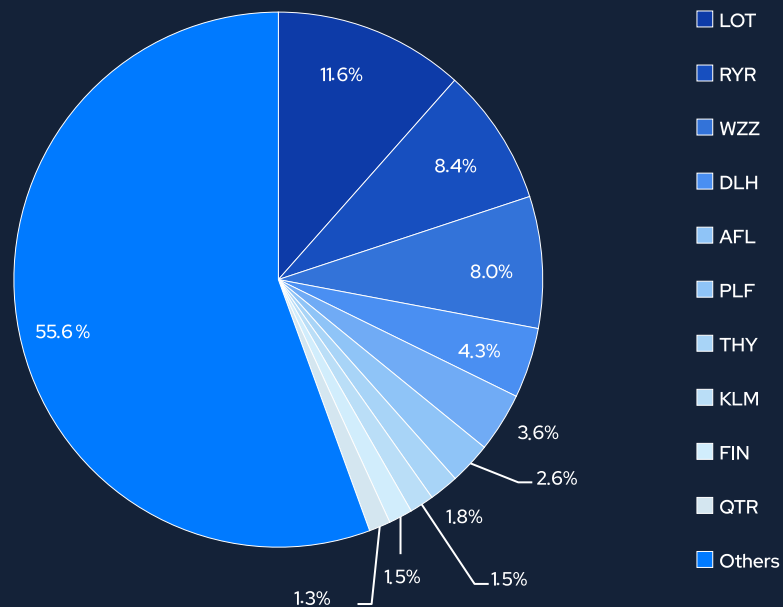
Source: Own elaboration on the basis of EUROCONTROL/PRU



■ Overflights ■ Arrivals/departures ■ Domestic flights

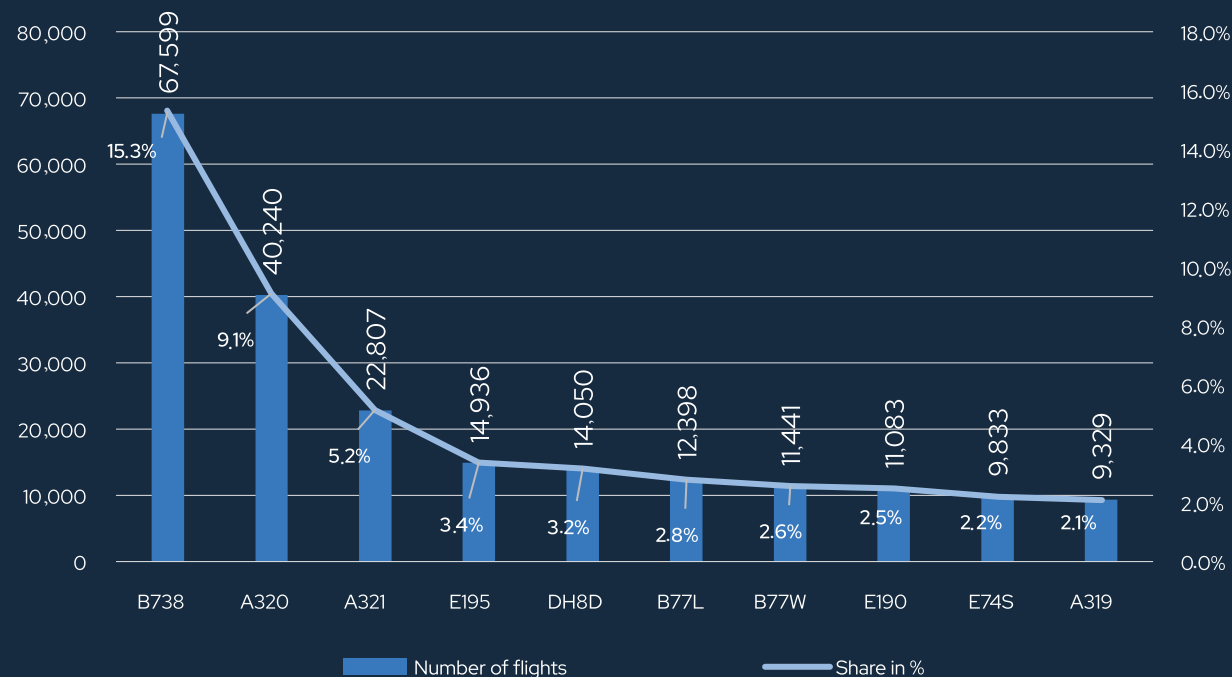
**Fig. 3** Structure of IFR operations in 2020

Source: Own elaboration on the basis of EUROCONTROL/STATFOR



**Fig. 4** Percentage share of the carriers in the total number of IFR operations in FIR Warsaw in 2020

Source: Own elaboration on the basis of EUROCONTROL/STATFOR



**Fig. 5** Share of aircraft types in number of flights in 2020 (TOP 10)

Source: PANSA own elaboration

## En-route delays

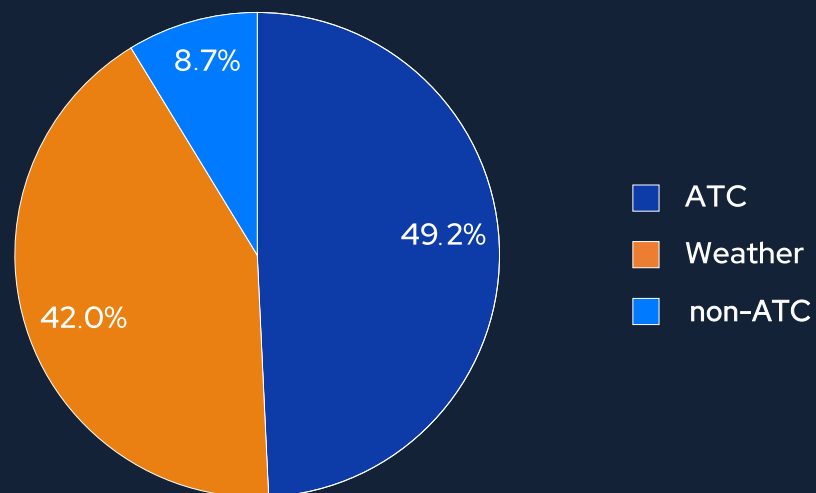
The number of minutes of delay in Polish airspace in 2020 (1,404 minutes) was determined solely by factors such as the structure and intensity of air traffic flows - ATC Capacity (100%). However, such a situation persisted mainly in the first three months of the year, before the pandemic outbreak, and, due to significantly low traffic volumes in the later months of the year, especially in the Summer 2020 season when the highest delays occur, the value of the route delay indicator was not affected.



**Fig. 6** Reasons for en-route delays in FIR Warsaw in 2020

Source: Own elaboration on the basis of EUROCONTROL/PRU

## Terminal delays



**Fig. 7** Reasons for terminal delays in Poland (min/arrival), 2020

Source: Own elaboration on the basis of EUROCONTROL/PRU

The value of the terminal delay indicator in 2020 was determined by the level of traffic from/to Polish airports, which was very low due to the pandemic. The number of airport operations (IFR arrivals) in 2020 was more than 56% lower compared to 2019.

In 2020, terminal delays, including ATC delays, were generated exclusively for EPKK, EPWA, EPMO airports. The value of the terminal delay indicator for Poland in the analysed period was 0.02 min/arrival, with an annual target set as 0.45 min/arrival within the draft Performance Plan RP3.

The terminal delay indicator was influenced by delays generated by ATC (0.01 min/arrival), which accounted for 49%, weather conditions (0.01 min/arrival, 42% share) and airport delays (0.002 min/arrival, 9% share). Air traffic flow volumes and TMA Warsaw structure (ATC Capacity: 0.01 min/arrival) and shortage of operational staff (ATC Staffing: 0.002 min/arrival) are the main causes of ATC delays, which, similarly to en-route delays, occurred primarily in the first quarter of 2020.





Implementation of the performance plan



# Safety

In accordance with Commission Implementing Regulation (EU) 2019/317, the key safety performance indicator is the minimum level of the effectiveness of safety management to be achieved by air navigation services providers certified to provide air traffic services. The level of implementation of the following safety management objectives is measured using KPIs:

- safety policy and objectives;
- safety risk management;
- safety assurance;
- safety promotion;
- safety culture.

In 2020, in terms of key safety indicators, the Polish Air Navigation Services Agency continued to monitor its level of SMS performance, also through the use of the EASA EoSM (Effectiveness of Safety Management) tool.



In 2020, targets were achieved in all the above mentioned areas. Additionally, in terms of safety promotion and a safety culture, a level higher than the target set by 2024 has been achieved.

In 2020, CANSO confirmed an increase in SMS maturity in PANSA in five components.

The improvement recorded in 2020 allowed PANSA to move into group C, i.e. the best rated agencies according to CANSO/EUROCONTROL ANSP in terms of maturity of SMS systems. The report conclusions based on such assessment are included in the "Roadmap for SMS development in PANSA" - a document specifying directions of SMS development in order to increase its maturity level in PANSA.

In 2020, the Polish Air Navigation Services Agency also continued to monitor the Safety Performance Indicators (SPIs) identified by CAA as part of its National Safety Plan.

# Air traffic

## En-route air traffic

The number of en-route operations performed in Polish airspace due to the COVID-19 pandemic outbreak in 2020 decreased by 58.7% compared to 2019.

**Tab. 1** *En-route operations in years 2015-2020*

| Category                                                    | 2015    | 2016    | 2017    | 2018    | 2019    | 2020    |
|-------------------------------------------------------------|---------|---------|---------|---------|---------|---------|
| Number of en route operations (IFR)                         | 699,454 | 754,702 | 792,720 | 871,791 | 912,455 | 376,969 |
| Deviation in number of flight operations from previous year | -0.30%  | 7.90%   | 5.00%   | 10.00%  | 4.70%   | -58.7%  |

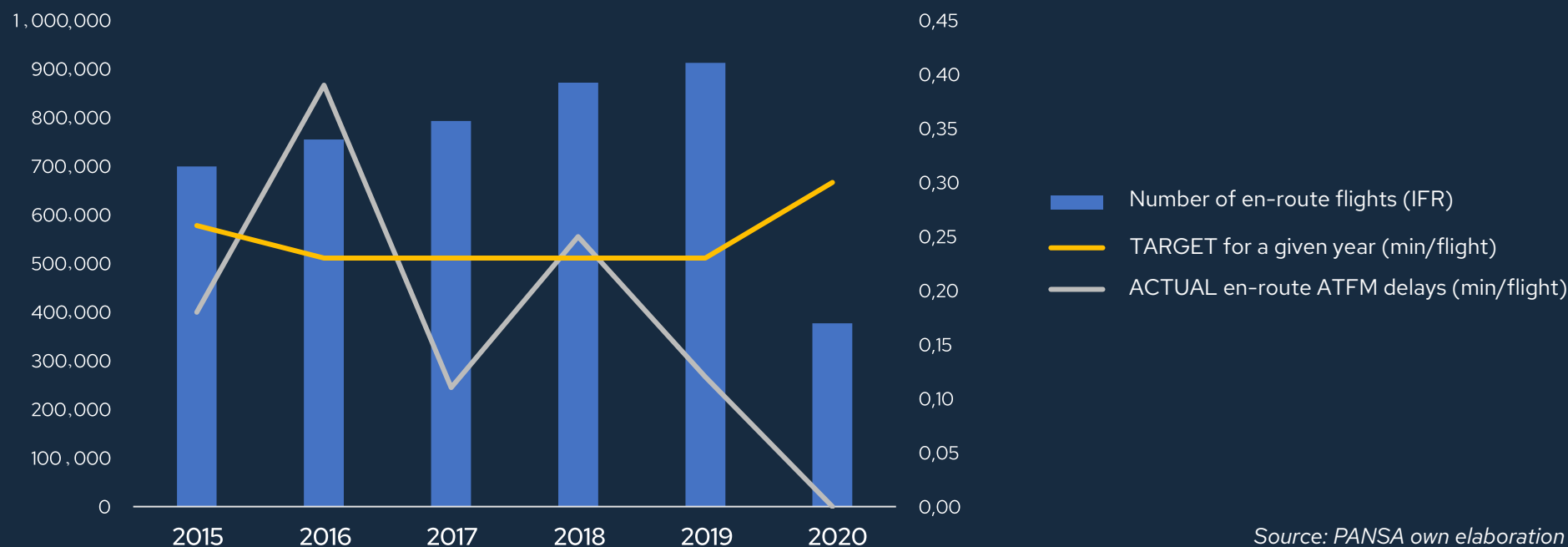
Source: PANSA own elaboration

The en-route traffic in 2020 in terms of the number of total operations (MVS) was significantly lower both compared to the previous year and the volumes included in the 2020 Plan, i.e. by 58.7% and by 60.4% respectively. The COVID-19 pandemic, which affected the aviation sector on an unprecedented scale, had a significant impact on this situation.

**Tab. 2** *En-route delays in years 2015-2020*

| Category                             | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|--------------------------------------|------|------|------|------|------|------|
| En-route delays (min/flight)         | 0.18 | 0.39 | 0.11 | 0.25 | 0.12 | 0.00 |
| Target for a given year (min/flight) | 0.26 | 0.23 | 0.23 | 0.23 | 0.23 | 0.30 |

Source: PANSA own elaboration

**Fig. 8** Number of en-route flights and ATFM delays in years 2015-2020

Source: PANSa own elaboration

## Terminal air traffic

The terminal traffic in 2020 in terms of the number of total operations (194,403 MVS) was significantly lower both compared to the previous year and the volumes included in the 2020 Plan.

As with en-route operations, the rapid growth in terminal operations in the first two months of 2020 was followed by a sharp downturn related to the COVID-19 pandemic.

**Tab. 3** *Airport operations in years 2015-2020*

| Category                                                               | 2015    | 2016    | 2017    | 2018    | 2019    | 2020   |
|------------------------------------------------------------------------|---------|---------|---------|---------|---------|--------|
| <b>Number of airport operations Poland (arrivals, IFR), including:</b> | 164,371 | 177,216 | 193,103 | 214,268 | 221,911 | 97,281 |
| <b>EPWA (arrivals, IFR)</b>                                            | 70,016  | 76,842  | 85,456  | 93,558  | 97,062  | 39,921 |
| <b>other airports (arrivals, IFR)</b>                                  | 94,355  | 100,374 | 107,647 | 120,710 | 124,849 | 57,360 |
| <b>Deviation in number of terminal operations from previous year</b>   | 5.37%   | 7.81%   | 8.96%   | 10.96%  | 3.57%   | -56.2% |

Source: PANSA own elaboration

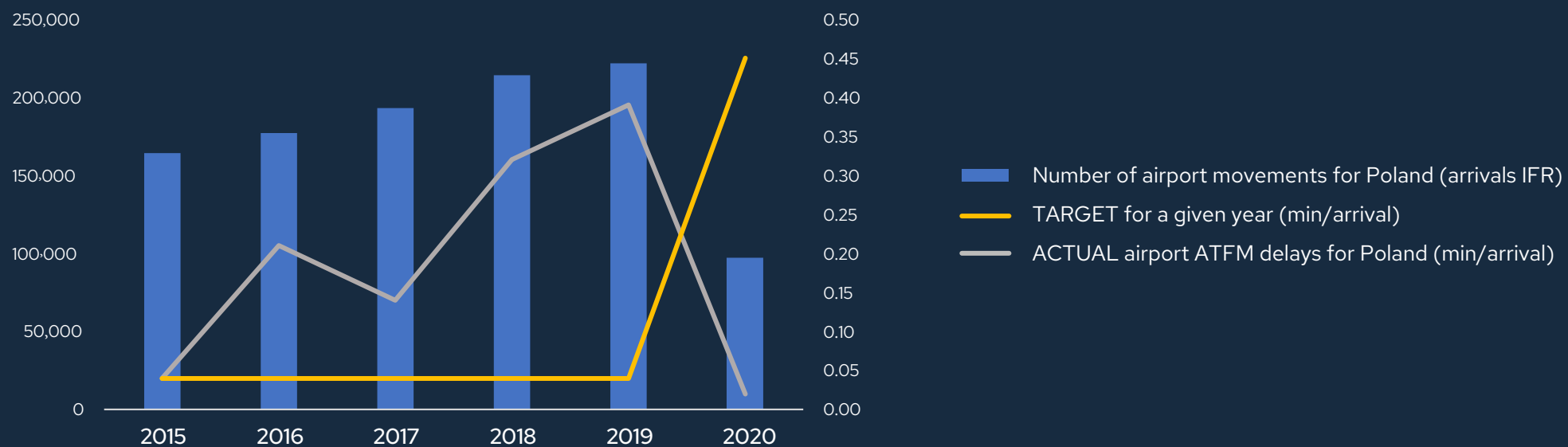
In 2015-19, the terminal delay indicator was 0.23 min/arrival for Poland, including 0.50 min/arrival for EPWA and 0.03 min/arrival for other airports. In 2020, terminal delays, including ATC delays, were generated exclusively for EPKK, EPWA, EPMO airports. The value of the terminal delay indicator for Poland in the analysed period was 0.02 min/arrival, with an annual target set as 0.45 min/arrival within the RP3 draft Performance Plan RP3.

**Tab. 4** *Terminal delays*

| Category                                               | 2015 | 2016 | 2017 | 2018 | 2019 | 2020  |
|--------------------------------------------------------|------|------|------|------|------|-------|
| <b>Terminal delays Poland (min/flight), of which :</b> | 0.04 | 0.21 | 0.14 | 0.32 | 0.39 | 0.02  |
| <b>EPWA (min/flight)</b>                               | 0.03 | 0.48 | 0.31 | 0.68 | 0.86 | 0.04  |
| <b>other airports (min/flight)</b>                     | 0.05 | 0.01 | 0.01 | 0.04 | 0.02 | 0.01  |
| <b>Target for a given year (min/flight)</b>            | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.45* |

\*As per draft RP3 Performance Plan

Source: PANSA own elaboration

**Fig. 9** Number of airport movements and ATFM delays in years 2015-2020

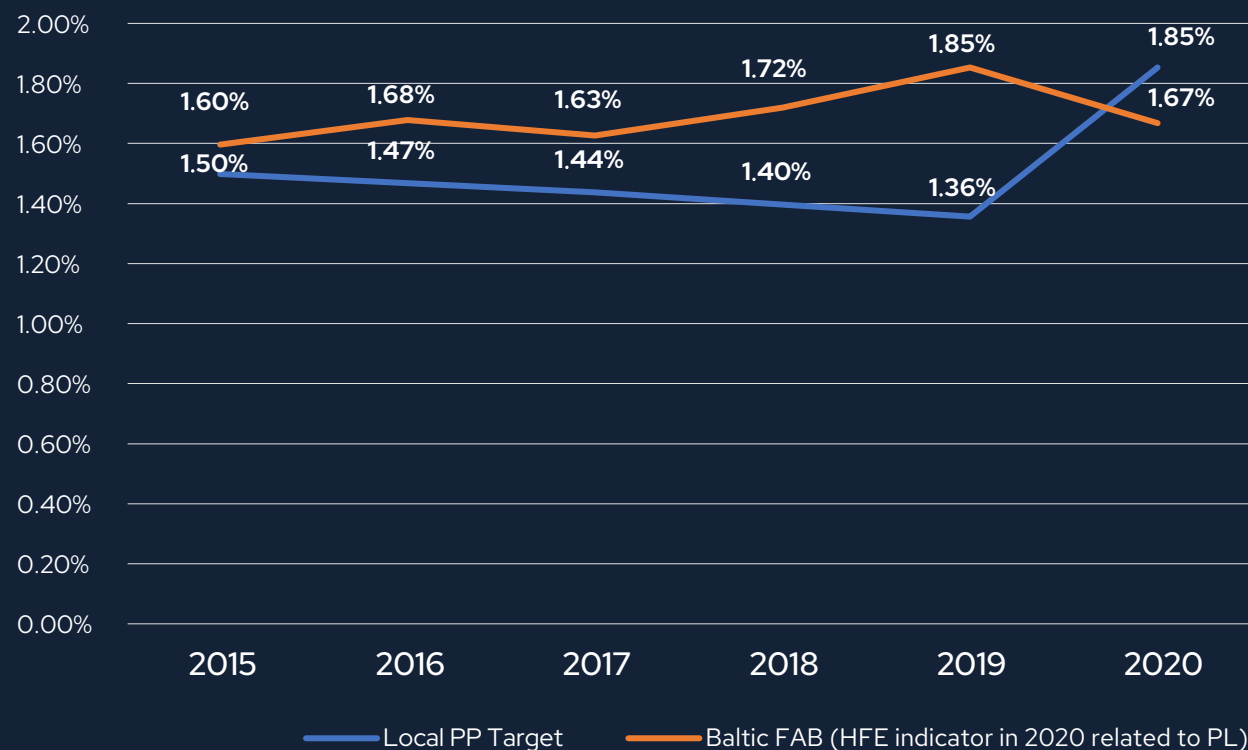
Source: PANSa own elaboration

# Environment

The environmental impact of air transport within the performance scheme is monitored through the horizontal en-route flight efficiency indicator, which corresponds to the difference between the length of the en-route part of the actual trajectory derived from surveillance data and the corresponding portion of the great circle distance.

Poland's 2020 target for the en-route horizontal flight efficiency indicator for the actual trajectory (KEA) was 1.85%, while actual performance was lower at 1.67%. The value of the environment indicator was significantly affected by the low level of traffic in Polish airspace due to the global pandemic. PANSA has reached the exact reference value set for 2020 for Poland by the PRB.

**Fig. 10** Horizontal flight efficiency indicator – HFE (2015-2020)



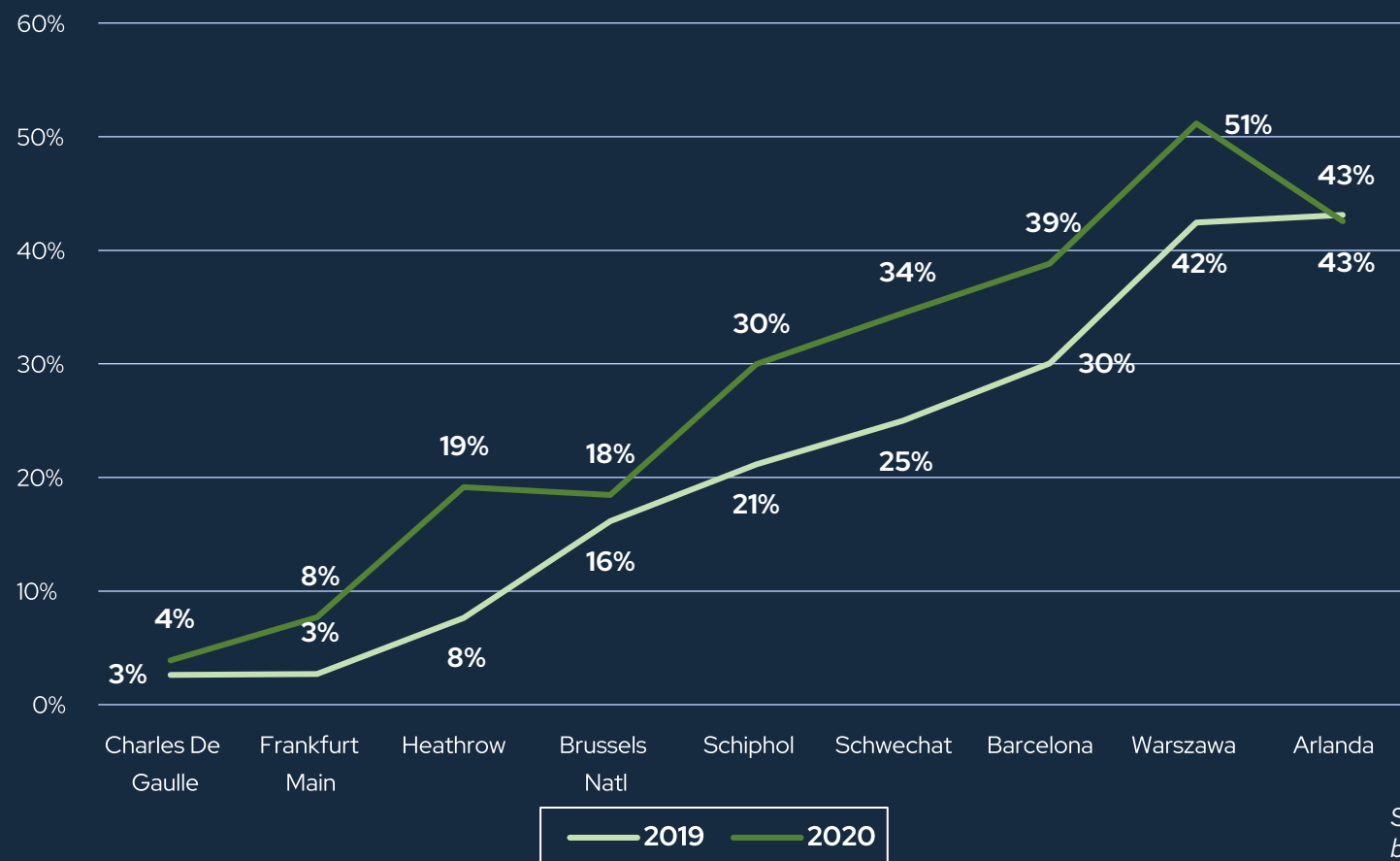
Source: PANSA own elaboration

Despite the significant drop in traffic, the en-route horizontal flight efficiency indicator for the actual trajectory on a monthly basis (HFE) - which is closely correlated with KEA - increased significantly in the period from June to October 2020. The analysis showed that the situation was correlated with the decisions of aircraft users - in particular with the flights that decided to fly over Poland instead of choosing a more direct route (e.g. flights related to military missions, flights avoiding

certain areas e.g. areas of conflict - Ukraine, cargo flights from East Asia, probably carrying medical equipment to Europe). Deviations in the length of the actual trajectory compared to the length of the allocated great circle distance significantly increased in the Summer 2020 season. In addition, due to the low total traffic level compared to previous years, the number of flights with a higher deviation had a disproportionate impact on the overall monthly and annual result.

The above shows, as in previous years, a negligible impact of ANSPs on the HFE indicator (including the annualised KEA).

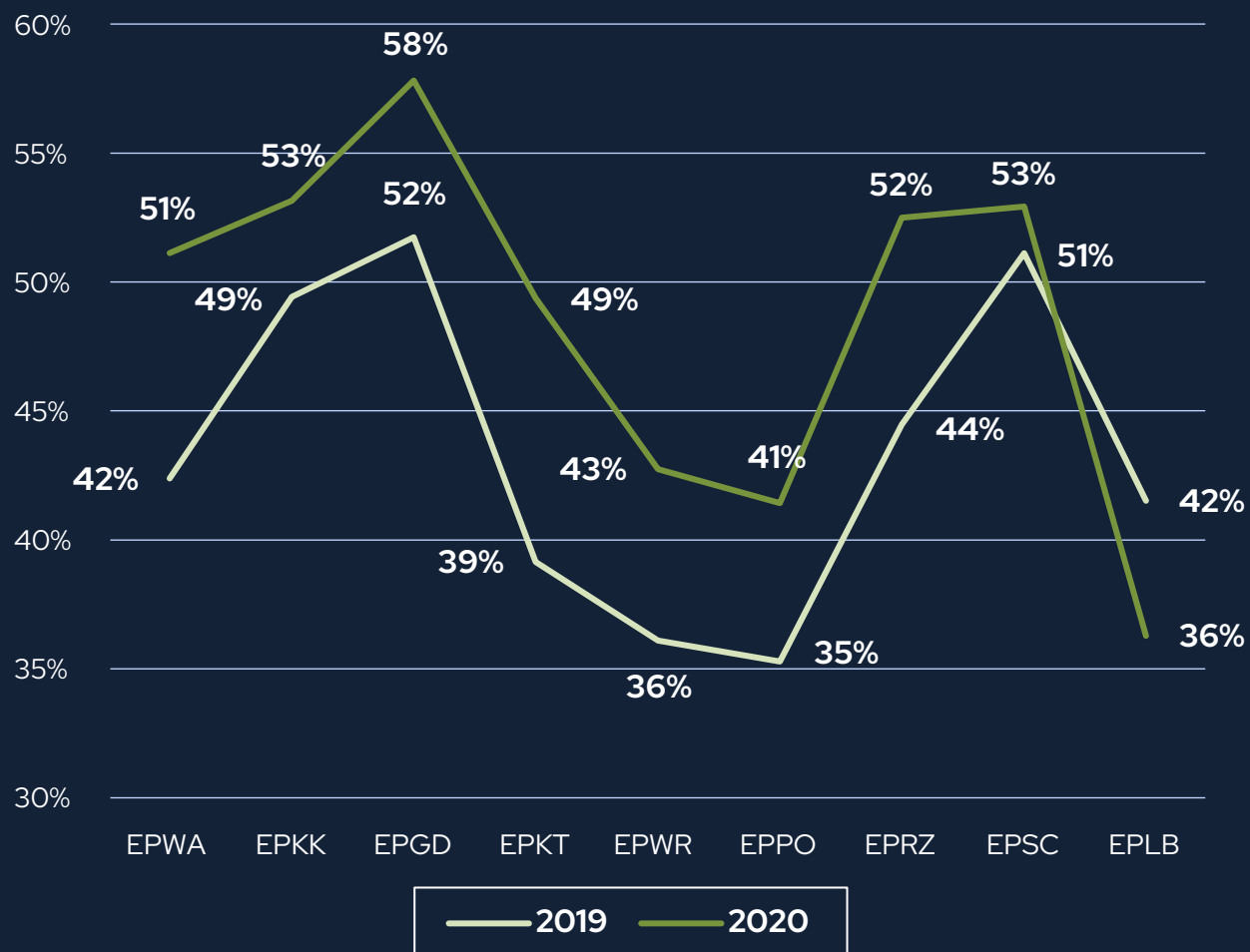
**Fig. 11** CDA Indicator for European airports in years 2019-2020



Source: Own elaboration on the basis of EUROCONTROL/PRU

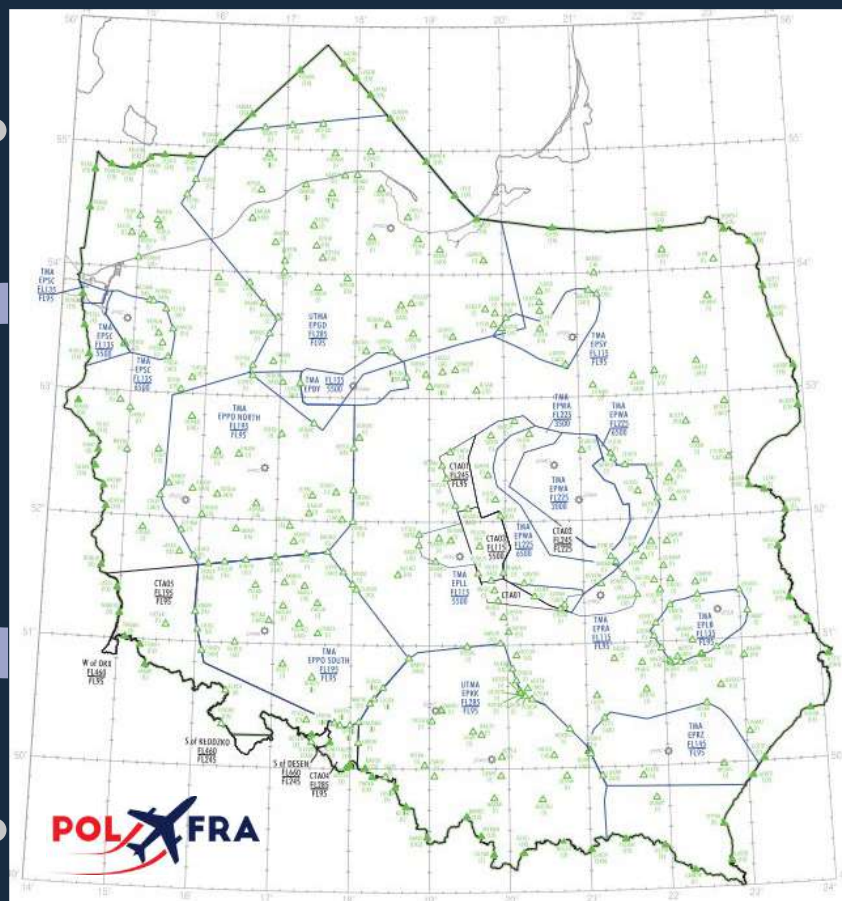
## Reduction of pollutant and noise emissions – CDA at TMA

**Fig. 12** CDA Indicator in years 2019-2020



Source: Own elaboration on the basis of EUROCONTROL/PRU

## Reduction of pollutant emissions – Polish Free Route Airspace (POLFRA)



The benefits in 2020 from POLFRA in FIR EPWW could be the reduction of:

- covered flight distance by 2,696,310 NM,
- en-route time by 383,462 minutes,
- fuel consumption by 10,119 tonnes,
- CO2 emissions by 30,854 tonnes.

## Cost efficiency

The year 2020 is the first period of a new regulatory perspective within the European Union's air navigation services performance scheme - the third reference period (RP3), covering the years from 2020 to 2024.

In 2020, the Polish Air Navigation Services Agency pursued actions to achieve the performance targets related to its scope of responsibility set in four key areas: safety, environment, capacity and cost-efficiency. The aforementioned objectives are included in the draft RP3 Performance Plan.

The COVID-19 pandemic, resulting on the one hand in a significant reduction in air traffic and on the other hand in the need for the Agency to take measures to protect the

health of its employees, had a significant impact on the 2020 results as well as on the implementation of activities by the Polish Air Navigation Services Agency in this period. In view of the crisis in the aviation sector caused by the pandemic in 2020, the European Commission launched a legislative process to find specific solutions for the performance scheme and navigation charges. As a result, the Commission adopted and published in the Official Journal of the EU the COMMISSION IMPLEMENTING REGULATION (EU) 2020/1627 of 3 November 2020 on exceptional measures for the third reference period (2020-2024) of the single European sky performance and charging scheme due to the COVID-19 pandemic.

**Tab. 5** *En-route service units (SU) 2019-2020*

| Category                       | 2019      | 2020      |
|--------------------------------|-----------|-----------|
| En-route service units (SU)    | 4,971,806 | 2,145,811 |
| planned value for a given year | 4,560,000 | 5,123,850 |
| Deviation                      | 9.03%     | -56.8%    |

**Source:** PANSA own elaboration

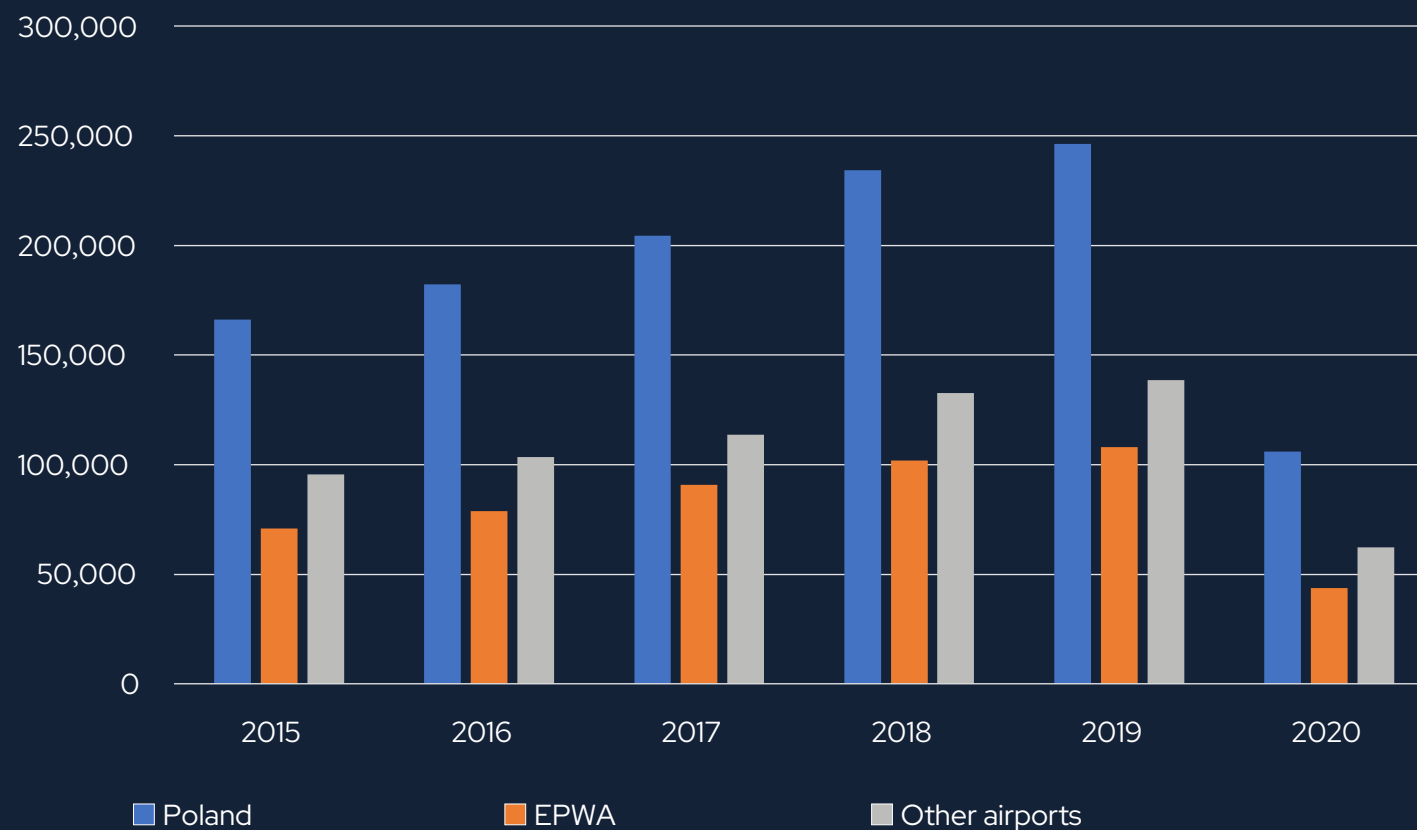
The en-route traffic in 2020 in terms of the number of total service units (SU) was significantly lower compared to the previous year, i.e. decreased by 56.8%. The COVID-19 pandemic, which affected the aviation sector on an unprecedented scale, had a significant impact on this situation.

**Tab. 6** *Terminal service units (SU-L) 2015-2020*

| Category                                                | 2015    | 2016    | 2017    | 2018    | 2019    | 2020    |
|---------------------------------------------------------|---------|---------|---------|---------|---------|---------|
| <b>Terminal service units Poland (SU-L), including:</b> | 166,155 | 182,241 | 204,425 | 234,431 | 246,281 | 105,905 |
| EPWA (SU-L)                                             | 70,718  | 78,789  | 90,729  | 101,889 | 107,857 | 43,637  |
| other airports (SU-L)                                   | 95,437  | 103,452 | 113,696 | 132,542 | 138,424 | 62,267  |
| planned value for a given year                          | 159,800 | 170,574 | 182,449 | 194,101 | 205,744 | 267,003 |
| Deviation                                               | 3.98%   | 6.84%   | 12.05%  | 20.78%  | 19.70%  | -60.34% |

**Source:** PANSa own elaboration

In 2020, terminal traffic included every landing approach attempt (with or without landing). The actual number of terminal service units invoiced to airspace users resulting from traffic served by PANSa was 101,362 SU-L and the number of service units exempted from navigation charges was 4,543 SU-L.

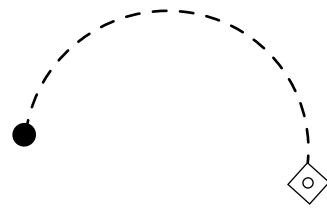
**Fig. 13** Actual terminal service units (SU-L) in the years 2015-2020**Source:** PANSa own elaboration

**Tab. 7** *Implementation of cost-efficiency targets in 2020*

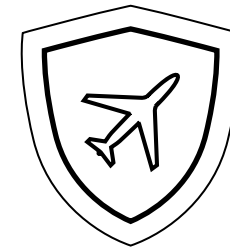
| KPA             | Indicator name                                                                                                             |                | Target 2020 | Actual 2020 |
|-----------------|----------------------------------------------------------------------------------------------------------------------------|----------------|-------------|-------------|
| Cost efficiency | The Determined Unit Cost (DUC) for en-route air navigation services – in the part concerning PANSa (in PLN at 2017 prices) |                | 171.89      | 314.86      |
|                 | The Determined Unit Cost (DUC) for terminal air navigation services – in the part concerning PANSa (in PLN at 2017 prices) | Warsaw         | 398.41      | 684.76      |
|                 |                                                                                                                            | Other airports | 713.73      | 1,293.46*   |

**Source:** PANSa own elaboration

\* Actual 2020 unit costs for terminal air navigation services in the part concerning PANSa (in PLN at 2017 prices), taking into account the traffic handled by all air navigation service providers at other airports in accordance with information from CAA dated 14.04.2021



Ensuring safety and security



The mission of PANSa is to ensure safe and smooth air traffic through efficient airspace management. The purpose is to guarantee that the above-mentioned concepts play a dominant role in all areas of air traffic management and air service provision.

To continuously improve the Safety Management System (SMS), PANSa performs cyclic tests of the system maturity (based on EASA, CANSO and EUROCONTROL guidelines). The results of the tests allow to identify all areas that need improvement. Such an approach is key to developing and implementing new methods, tools and ways of information flow.

Our approach to safety management is diverse and includes:

1. promoting comprehensive understanding of all aspects of safety;
2. learning from incidents and accidents;
3. promoting the Just Culture principle (looking for causes rather than blaming parties for causing the events);
4. sharing data and best practices for the benefit of airspace users and the whole aviation community.

In monitoring aviation incidents, PANSa uses the Risk Analysis TOOL (RAT), which is widely accepted in Europe. Based on ATM PANSa reports, there have been no aviation accidents involving ATC units with human fatalities in 2020. At the same time, a 34.5% decrease in the number of reported incidents compared to last year was recorded, with a 52.5% decrease in the total number of flights. In 2020, 1,380 incidents were reported. The reason for such decreases was mainly the COVID-19 pandemic.

The test results related to the reported incidents showed that the following occurred in 2020:

1. 1 aviation incident of 'A' severity class (serious incident involving ATS units);
2. 15 aviation incidents of 'B' severity class (main incident involving ATS units);
3. 59 aviation incidents of 'C' severity class (significant incident involving ATS units).

In 2020, a change in the frequency of each type of incident was also observed:

1. runway incursions - decrease by 23.5 % (SPI RI/10 000 ops);
2. airspace violation - increase by 11.9 % (SPI AIs/100 000 ops);
3. violation of separation minima - decrease by 41.2 % (SPI SMI/100 000 ops).

In 2020, 173 technical incidents were registered during air traffic management (ATM), which constitutes a decrease by 50.4% compared to the number of 349 in 2019:

1. 1 air incident of ,AA' severity class;
2. 0 air incidents of ,A' severity class;
3. 1 incident of 'B' severity class;
4. 5 incidents of 'C' severity class.

Working with our partners within the framework of CANSO and EUROCONTROL industry organisations, PANSa provides an expertise and experience to help implement a uniform European safety framework. In this way PANSa contributes to the safer evolution of the European sky.

## Aeronautical Rescue Coordination Centre (ARCC)

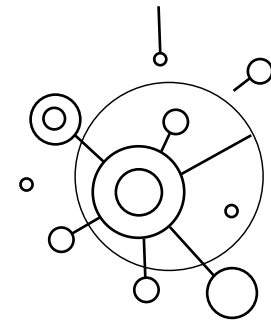


The Civil and Military Aeronautical Rescue Coordination Centre ARCC in PANSA is responsible for providing search and rescue services (ASAR) by coordinating search and rescue activities in FIR Warsaw. The ARCC centre also acts as the search & rescue point of contact (SPOC) as part of the international Cospas-Sarsat satellite system.

The activities undertaken in this area in 2020 include, among other things: preparation and participation in exercises related to air rescue SAREX, participation in communication and exchange of information during search and rescue operations, as well as coordination of RCC activities with air traffic services, institutions and organisations related to the aviation environment, also conducting activities in the field of search and rescue, among other things, the Civil Aviation Authority (CAA), Ministry of National Defence, Polish Medical Air Rescue, Volunteer Water Rescue Service (WOPR), Tatra Volunteer Search and Rescue (TOPR), the army, the police, the border patrol and the Maritime Rescue Coordination Centre.



## Infrastructure and CNS/ATM investments



## Infrastructure and CNS/ATM investments

The Polish Air Navigation Services Agency invests in modern technological solutions to maintain the highest level of safety in air traffic. Investments into modernisation and construction of modern CNS/ATM infrastructure and facility incurred by PANSA in 2020 amounted to approximately PLN 145.7 million.

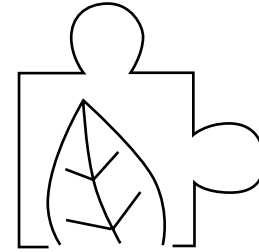
**Tab. 8** *Main investment projects in a process of implementation in 2020*

| Investment project name                         | Capex (mPLN) |
|-------------------------------------------------|--------------|
| ATM system with a simulator                     | 36.1         |
| UAV environment development (Programme U-Space) | 12.1         |
| Modernization of the ATM system                 | 9.1          |
| ATM OPS Centre Poznań                           | 3.9          |
| Campus                                          | 2.1          |

**Source:** PANSA own elaboration



PANSA pro-ecology activities



For years, the Polish Air Navigation Services Agency has been involved in various solutions aimed at environmental protection.

The Agency ensures that, while maintaining the highest level of flight safety, its negative impact on the environment is also reduced. PANSA is making efforts to enable, among other things, the reduction of aircraft fuel consumption and carbon dioxide emissions. PANSA carries out such activities in line with the five pillars for the Green Single European Sky announced by EASA and EUROCONTROL. The pillars set out how air traffic control services may help meet the EU environmental targets for

transport and significantly reduce their greenhouse gas emissions by 2050.

One of the solutions particularly beneficial for our environment

is the introduction in Poland of the concept of **Free Route Airspace (FRA)**, known as **POLFRA**. The solution enables carriers to plan flights through Polish airspace using the shortest routes,

bypassing the airway network.

Another solution that PANSA has introduced is the so-called "green approach", a technique known as the **Continuous Descent Approach (CDA)**. This technique, which has been implemented since 2009, consists in allowing the aircraft approaching destination airports to descend in a smooth and uninterrupted manner, preferably straight away from its cruising altitude. Wherever possible, controllers shall also allow pilots to self-select the optimum rate of descent with minimum engine thrust. Therefore, it is possible to significantly reduce emissions and aircraft noise. It is estimated that the

contributed to an increase in the use of CDA technology, which already concerns every second arrival at the largest airports in Poland. The record holder in this respect is Gdańsk Airport, where CDAs were applied in the case of 58% of arrivals in 2020. On the other hand, in Warsaw alone, where CDAs were used in 51% of arrivals, the resulting savings amounted to 929 tonnes of fuel and almost 3,000 tonnes of CO<sub>2</sub> emissions. It is worth noting that we are one of the leaders in Europe when it comes to the use of CDA technology.

The table below presents data on CDAs - "green approach" implemented at major Polish airports in 2020.

**Tab. 9** CDAs implemented at major Polish airports in 2020

|                                                | EPWA   | EPKK   | EPGD   | EPKT   | EPWR   | EPPO   | EPRZ   | EPSC   | EPLB   | Total         |
|------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------|
| Number of landings                             | 39,505 | 13,053 | 10,673 | 8,376  | 6,662  | 4,849  | 1,929  | 1,565  | 812    | <b>87,424</b> |
| CDA operations                                 | 20,185 | 6,934  | 6,165  | 4,134  | 2,849  | 2,010  | 1,012  | 828    | 295    | <b>44,412</b> |
| CDA ratio                                      | 51.09% | 53.12% | 57.76% | 49.36% | 42.76% | 41.45% | 52.46% | 52.91% | 36.33% | <b>50.80%</b> |
| Fuel savings (tonne)                           | 929    | 319    | 284    | 190    | 131    | 93     | 47     | 38     | 14     | <b>2,044</b>  |
| Reduction of CO <sub>2</sub> emissions (tonne) | 2,927  | 1,005  | 894    | 599    | 413    | 291    | 147    | 120    | 43     | <b>6,440</b>  |

**Source:** PANSA own elaboration

use of CDA reduces fuel consumption by up to 46 kg per flight, and flight noise during descent by 1-5 dB - depending on the case and type of aircraft. PANSA has

A-CDM (Airport Collaborative Decision Making) system implemented operationally at Warsaw Chopin Airport. The system helps controllers to manage the

Our proactive attitude has contributed to the introduction of green technologies also at airports. One of such technologies is the

movement of aircraft on the tarmac in a more effective manner and thus, among other things, to better determine the optimal moment for starting the engines. With A-CDM, the time that aircraft engines run on the ground has been reduced, resulting in lower fuel consumption, emissions and noise levels.

PANSA also cares for the environment by introducing new technologies and modernising its infrastructure. PANSA is currently paying special attention to environmentally friendly solutions in the design of its new Campus in Reguły near Warsaw.

The main source of heat supply for the new Campus shall be heat pumps using ground boreholes up to 150 m long. In addition, the Campus shall be equipped with air source heat pumps, solar collectors with a total capacity of 2 MW, heat recovery devices to recover heat from the server rooms and chiller machine rooms. The total share of renewable energy sources in the annual demand for usable electricity of the new Campus shall be as high as 38%. Therefore, it shall be possible to completely eliminate the oil boiler room, which is the source of heat for our current Campus. It means that the source of pollution emitted into the air every year,

among other things, 520,000 kg of CO<sub>2</sub>, 573 kg of sulphur oxides, 501 kg of nitrogen oxides, 215 kg of carbon monoxide and 14.3 kg of total dust, shall be eliminated. PANSA's new Campus shall also have its own retention tanks to collect rainwater, which, after treatment, may be used on site, for example, for landscaping.

PANSA also achieves environmental savings in indirect aviation activities. Furthermore, PANSA provides environmental training for all employees and pays attention to correct segregation of waste. In this way, PANSA has already managed to separate 22.6 tonnes of paper, 1.7 tonnes of plastic and 1.1 tonnes of glass from municipal waste. Seemingly small changes, such as replacing fluorescent lamps with LED lights, also make a difference. Thanks to such modernisation activities carried out in 2019 alone, the energy consumption by the Polish Air Navigation Services Agency fell by 6,720 kWh.

In addition, PANSA cares for the environment by introducing provisions in internal documents, in which it draws attention to the issues of sustainable development, referring, among other things, to the so-called "socially responsible public procurement" and "green public procurement".

## ATC training centre

The Polish Air Navigation Services Agency is the only institution in Poland preparing civil air traffic controllers (ATC), staff and candidates for work in air traffic services (ATS) and training staff in the aviation sector.

The primary task of the ATS Personnel Training Centre "OSPA" of the Polish Air Navigation Services Agency is to conduct professional training for candidates for air traffic controllers and flight information officers, dedicated to work in air traffic services, as well as continuing professional development courses to maintain competence of both the above-mentioned professional groups. The objective of the afore-said training is to ensure suitably qualified personnel required to provide air traffic control (ATC) and flight information services (FIS).

OSPA's simulators allow practical training that accurately reflects the operational environment, equipment and the Pegasus\_21 ATM system. ATS Personnel Training Centre also has a state of the art simulator - an aerodrome control tower (TWR) with 360-degree imaging and four airport control towers with 120-degree imaging.

In 2020, PANS, as well as the entire aviation sector, had to face the crisis caused by the COVID-19 pandemic, which also affected the ATS Personnel Training Centre.

Due to the pandemic restrictions and a significant drop in air traffic, apprentice training has been suspended or significantly limited. Priority training was set up and lower priority training was rescheduled. Both practical and theoretical refresher training took place according to the training plan despite the pandemic. Additionally, the work on the creation of a training platform dedicated to the provision of theoretical training by remote method began.

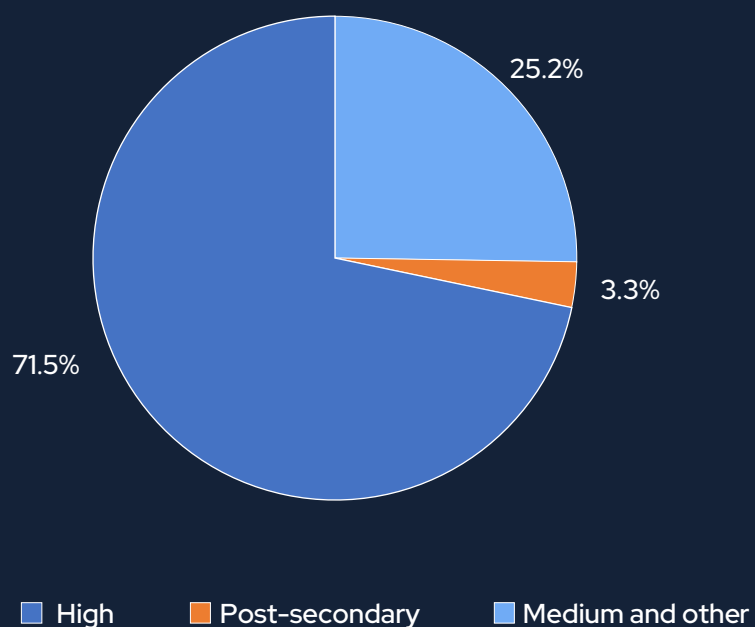
Furthermore, in 2020, the President of the CAA extended OSPA's Air Traffic Controllers Training Organisation Certificate to include training in the ADI/AIR and ADI/GMC endorsements at the EPWA TWR unit and extended the certificate of aeronautical information service personnel training organisation held by OSPA until 31.12.2023.



# Human resources

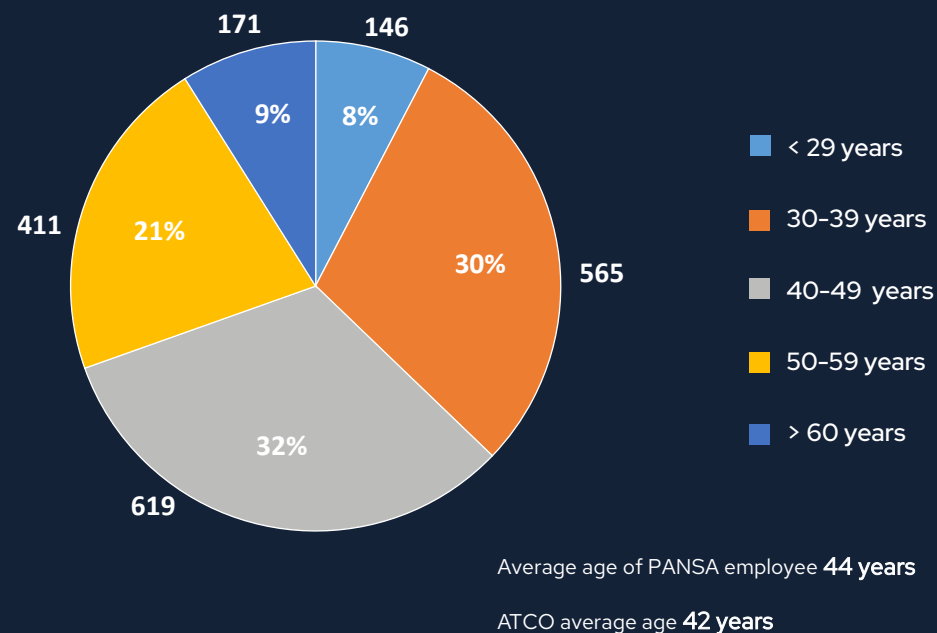
As for 31 December 2020, the Polish Air Navigation Services Agency employed 1,912 employees.

**Fig. 14** Educational structure of PANSa employees (as for 31.12.2020)



Source: PANSa own elaboration

**Fig. 15** Age structure of PANSa employees (as for 31.12.2020)



Source: PANSa own elaboration

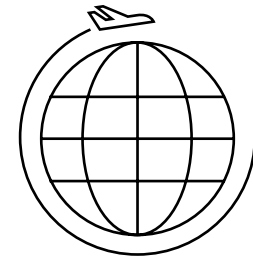
**Tab. 10** *Employment in FTEs and persons as for 31.12.2020 compared with the employment as for 31.12.2019*

| PRU Category |                                                                                   | Employment in FTEs |            | Difference | Employment in persons |            | Difference |
|--------------|-----------------------------------------------------------------------------------|--------------------|------------|------------|-----------------------|------------|------------|
|              |                                                                                   | 31.12.2019         | 31.12.2020 |            | 31.12.2019            | 31.12.2020 |            |
|              |                                                                                   | 1                  | 2          | 3 (2 - 1)  | 4                     | 5          | 6 (5 - 4)  |
| 1            | ATCO in OPS                                                                       | 583.13             | 587.71     | 4.58       | 591.00                | 597.00     | 6.00       |
| 2            | ATCO on Other Duties                                                              | 30.00              | 22.00      | -8.00      | 30.00                 | 22.00      | -8.00      |
| 3            | Ab Initio Trainee Controller                                                      | 93.00              | 34.00      | -59.00     | 93.00                 | 34.00      | -59.00     |
| 4            | On-the-Job Training (OJT)                                                         | 42.63              | 53.88      | 11.25      | 43.00                 | 54.00      | 11.00      |
| 5            | ATC assistants                                                                    | 48.50              | 46.25      | -2.25      | 49.00                 | 47.00      | -2.00      |
| 6            | OPS support non-ATCOs                                                             | 306.45             | 369.55     | 63.10      | 309.00                | 372.00     | 63.00      |
| 7A           | Technical support staff for operational CNS/ATM, monitoring and control systems   | 329.00             | 309.25     | -19.75     | 329.00                | 311.00     | -18.00     |
| 7B           | Technical support staff for the development and implementation of CNS/ATM systems | 51.63              | 39.33      | -12.30     | 54.00                 | 41.00      | -13.00     |
| 8            | Administrative staff                                                              | 369.15             | 344.56     | -24.59     | 373.00                | 348.00     | -25.00     |
| 9            | Support service staff                                                             | 107.25             | 46.70      | -60.55     | 108.00                | 47.00      | -61.00     |
| 10           | Other employees                                                                   | —                  | 38.25      | 38.25      | —                     | 39.00      | 39.00      |
| Total        |                                                                                   | 1,960.73           | 1,891.47   | - 69.25    | 1,979.00              | 1,912.00   | - 67.00    |

Source: PANSA own elaboration



## Strengthening of PANSAT national and international position



The international cooperation of the Polish Air Navigation Services Agency is diverse. Our partners are both analogous institutions of other countries within the framework of bilateral operational cooperation as well as global associations - CANSO, ICAO, NATO - and also European institutions: European Commission, EASA, EUROCONTROL, SESAR JU, SESAR DM and grassroots associations of air navigation agencies such as the prestigious A6 Alliance, the B4 Consortium or the GATE ONE Platform.

## RESEARCH AND DEVELOPMENT

PANSA strongly emphasises its presence in European research and development projects. The Polish Air Navigation Services Agency entered the next phase of the works in the SESAR 2020 Programme as the so-called active contributor.

In 2020, PANSA started activities including, in particular:

### ATM:

SESAR R&D projects, under SESAR 2020, Wave 2, e.g:

- PJ.10-W2 Separation Management En-route and TMA, (Separation

Management (Sol #93 : Delegation of airspace between ATSUs using Virtual Centre concept):

- PJ.18-W2 - 4D Skyways (Sol #53 : Improved Ground Trajectory Predictions enabling future automation tools; Sol #56 Improved vertical profiles through safe vertical clearances; Sol #88 Trajectory Prediction Common Service).

### ATFM/ASM:

R&D projects for the development of ATFCM and ASM processes as well as for the prototyping of new tools to support such processes, e.g

- a. PJ.07-W2 Optimised Airspace Users Operations;
- b. PJ.09-W2 - Digital Network Management Services.

### TWR:

R&D projects aimed at extending the functionalities of systems supporting the NRLs, in particular those related to the automation of activities, support of security barriers and improvement of situational awareness: e.g.

- PJ.05-W2 Digital Technology for Tower
- PJ.02-W2-25 Safety support tools

for avoiding runway excursions (continued)

### U-Space:

- PJ.13-W2 Enable RPAS Insertion in Controlled Airspace.
- Furthermore, the Polish Air Navigation Services Agency has been involved in the development of the request and assumptions of PJ.34 Aura and the Very Large Demonstration GOF 2.0 projects, which have received SE-SAR approval and which have been scheduled to implementation in January 2021.

All the works carried out by the Polish Air Navigation Services Agency as part of the individual SESAR 2020 Solutions were in accordance with the formula of R&D projects, including:

- research (simulations, exercises, studies, analyses) and development activities (introducing changes and improvements to processes and products);
- production of R&D-specific deliverables in the form of documents/records/reports accompanying the do-

cuments;

- supporting the development of the strategic areas of the Polish Air Navigation Services Agency by financing development tasks under PANSA programmes using the Horizon 2020 instrument;
- extending the catalogue of the services rendered by the Agency by adding the subcontracted R&D activities.

PANSA also performed tasks within the project roles assigned to the Polish Air Navigation Services Agency within the framework of the individual SESAR 2020 Solutions.

PANSA, together with other members of the Joint Undertaking and PANSA partners, actively participated in the process of preparing the Proposals for new projects for the next Horizon 2020 tenders, including e.g. GoF 2.0 and USPACE4UAM.

In 2020, PANSA also continued its function of chairing the B4 Strategy Team.

As a result of its efforts in 2020, the Polish Air Navigation Services Agency submitted bids for projects from the NCBiR competition pool and, at the end of the year, the „SAMPLE” project was selected and launched.

## SESAR Deployment

In 2020, PANSA continued its participation in the SESAR Deployment process, both as an Implementing Partner and as a founding Member of SESAR Deployment Alliance (SDA)<sup>[1]</sup>.

As the Implementing Partner, PANSA continued to implement the deployment projects launched in previous years using EU co-financing under the CEF Transport Calls for Proposals.

As a member of the SDA, representatives of the Polish Air Navigation Services Agency participated in the governing bodies of this institution: The General Meeting of Members (GMoM) and the Board of Directors of the SDA (PANSA representative supervised the Board of Directors). By participating in the aforementioned governing bodies of the SDA, PANSA representatives had a direct insight into the financial and organisational issues of the SDM, thus possessed and exerted real influence on the functioning of this institution.

[1] In December 2014, on the basis of the Commission Implementing Regulation (EU) No 409/2013, the SESAR Deployment Alliance consortium was established. Since January 2018, the consortium has been transformed into a legal entity, i.e. SESAR Deployment Alliance (Association Internationale Sans But Lucratif (AISBL)).

| Project name                                                                                                                   | CEF     | Planned project budget (in Euro) | Grant amount awarded (in Euro) |
|--------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------|--------------------------------|
| 1st part of the upgrade of the P_21 PEGASUS system to SESAR functionalities – Test and Validation Platform (project completed) | CEF2014 | 6,600,000                        | 3,300,000                      |
| LAN network upgrade                                                                                                            | CEF2015 | 2,009,500                        | 1,708,075                      |
| The ECG Communication System upgrade                                                                                           | CEF2015 | 1,567,500                        | 1,332,375                      |
| ATM System Upgrade towards Free Route Airspace (project completed)                                                             | CEF2016 | 5,880,000                        | 2,528,400                      |
| iTEC Tests, Validation and Planning                                                                                            | CEF2016 | 1,716,360                        | 738,035                        |
| Implementation of Data Link Service for the ATM in Warsaw FIR (project completed)                                              | CEF2016 | 5,247,102                        | 2,256,254                      |
| Deploy SWIM Governance                                                                                                         | CEF2016 | 90,400                           | 38,872                         |
| NewPENS Stakeholders contribution for the procurement and deployment of NewPENS (project completed in 2020)                    | CEF2016 | 145,900                          | 62,737                         |
| DLS Implementation Project – Path 2                                                                                            | CEF2016 | 148,805                          | 63,986                         |
| General Call – DLS Implementation Project – Path 1 'Ground' stakeholders (project completed)                                   | CEF2016 | 142,501                          | 61,275                         |
| European Deployment Roadmap for Flight Object Interoperability (project completed)                                             | CEF2016 | 25,000                           | 10,750                         |
| Local traffic complexity management                                                                                            | CEF2017 | 1,694,000                        | 847,000                        |
| SWIM Common PKI and policies & procedures for establishing a trust framework                                                   | CEF2017 | 101,515                          | 50,758                         |
| IP1 DLS European Target Solution assessment                                                                                    | CEF2017 | 139,600                          | 69,800                         |
| <b>SUM</b>                                                                                                                     |         | <b>25,508,183</b>                | <b>13,068,316</b>              |

**Tab. 11**

*Projects associated with the implementation of the SESAR/PCP Program co-financed from EU funds under the CEF Transport Call for Proposals, in which PANSA participates as a leader or as a contributor.*

Source: PANSA own elaboration

## A6 Alliance

In 2020, the Polish Air Navigation Services Agency continued to participate in all three activities of A6 Alliance, which brings together the largest European air navigation service providers:

- coordination between ANSPs in the SESAR Joint Undertaking;
- coordination between ANSPs of the works within SESAR Deployment Manager;
- joint actions in the field of European aviation policy/changes European ATM system.

In 2020, PANSA was the leader of two consortia - coordinated them both internally and on the A6 Strategy Board:

- PHRC (with HungaroControl and ROMATSA) for the SESAR Deployment Manager;
- B4 (with ANS Czech Republic, Slovak LPS and Lithuanian Oro Navigacija) for the SESAR Joint Undertaking.

In 2020, PANSA Acting President Janusz Janiszewski served as the Chairman of the A6 Steering Board, developing common A6 Alliance positions and representing the A6 Group at high

level meetings. PANSA chairmanship of the Steering Board has provided the opportunity to directly influence the decisions related to the development of the air traffic management industry in Europe, including participation in the works on the new Single European Sky legislative package. The areas in which PANSA was particularly involved included the future of SESAR Deployment Manager, participation of A6 members in the new integrated ATM partnership - SESAR 3, digital communications - SDB (SES Digital Backbone), virtualisation and ADSP.

At the end of 2020, PANSA President was elected for another term as the Chairman of the A6 Steering Board. In 2020, Swiss skyguide joined the A6 alliance as a direct member.

On the occasion of the 100th anniversary of air traffic control (ATC), an exhibition was inaugurated at Warsaw Chopin Airport on the initiative of PANSA and members of A6 Alliance.



PANSA has actively used the CANSO forum to formulate and present its own opinions on draft civil aviation legislation. In addition, in December 2020, the Director of the Bureau of Strategy and International Cooperation of PANSA, Magdalena Kukuła was elected Chair of the Strategy and Policy Group of CANSO Europe to coordinate the strategic and political activities of the aviation organisation bringing together all global air navigation agencies as of 1 January 2021.

## Bilateral cooperation

As part of bilateral contacts at the operational level, PANSa actively cooperated with air navigation service providers, among other things, to optimise air traffic flow in the region.

As part of these contacts:

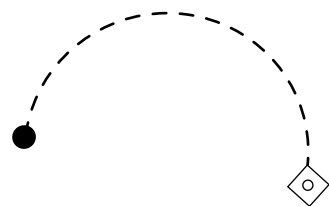
- in September 2020, PANSa signed an agreement with Entry Point North AB, PANSa counterpart in Sweden, as part of a joint educational project - long-term ATM operational training,
- in September and November 2020, the PANSa aeronautical inspection body carried out the assignment related to flight calibration services for two European air navigation service providers (Cyprus' DCA, Moldova's MoldATSA) and for the airport manager in Chisinau. In the first days of September, PANSa also performed calibration services at the NATO base in Lithuania - EYSA, Šiauliai (Šiauliai),
- PANSa participated in intergovernmental consultations, economic missions and multilateral business forums, together with its foreign partners, e.g. from Saudi Arabia, Qatar, Kazakhstan,

Turkey, Ukraine, with respect to the potential cooperation in the field of drones and potential acquisition of the PansaUTM system in the context of UAV flight coordination and digital management of requests and permissions for flights in the airspace.

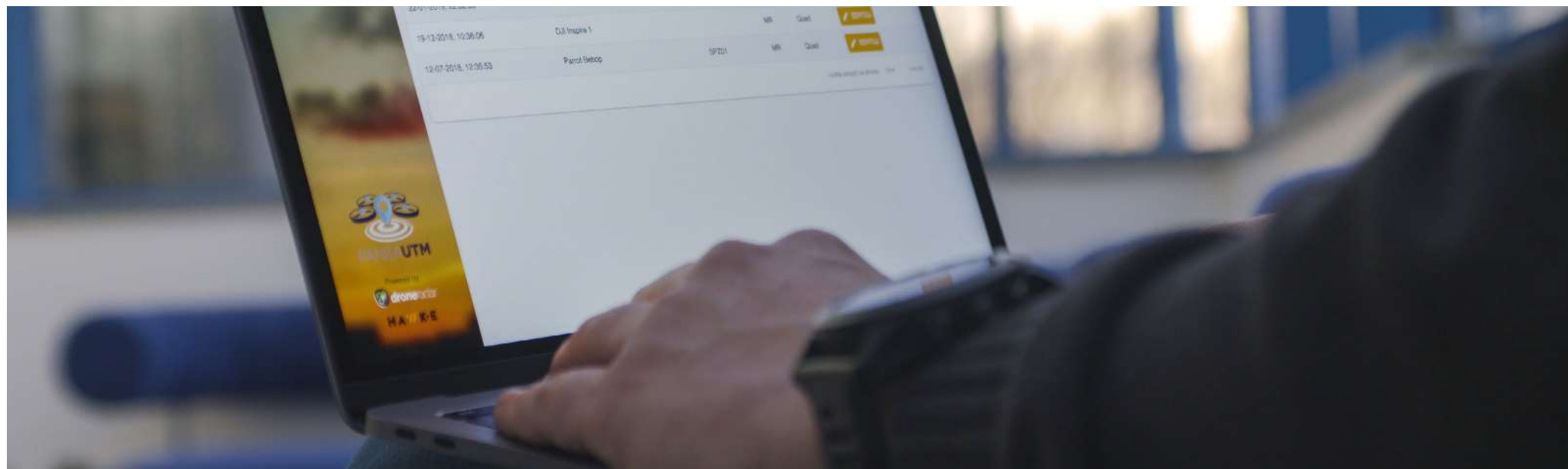
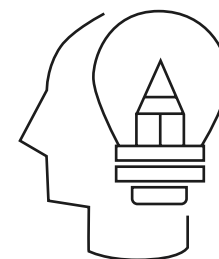
## iTEC Consortium

In 2020, PANSa continued to operate within the iTEC Collaboration (Interoperability Through European Collaboration) industry consortium on the basis of the ATM system co-development partnership agreements concluded with DFS, NATS, ENAIRE, LVNL, Avinor and Oro Navigacija in 2017. As part of the iTEC Co-operation, air navigation agencies from seven European countries are working with technology partner Indra Sistemas to achieve smoother and more efficient air traffic management through the harmonisation and development of an advanced, state-of-the-art iTEC ATM system, supporting the implementation of the Single European Sky.

In August 2020, PANSa, as the first member of the iTEC Cooperation, signed an agreement with Indra Sistemas to jointly develop and implement the most advanced next-generation Air Traffic Management (ATM) system: iTEC v3. In the same year, PANSa completed the first phase of the contract for the virtualisation of the validation and testing platform. Operational and technical workshops were organised to familiarise the personnel with the methods of functioning of the system. In this way, phase two began.



PANSA proprietary solutions





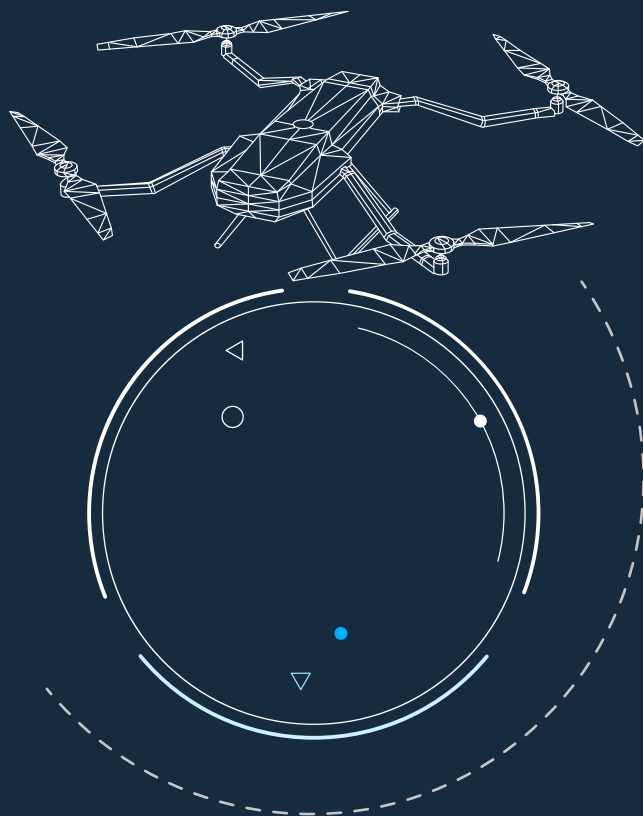
## PansaUTM System and U-Space Programme

PansaUTM is a concept of digital coordination of flights of unmanned aerial vehicles and management of applications and approvals for flights in Polish airspace. PansaUTM consists of proprietary operational solutions of PANSA and system part integrated with the most popular mobile application among drone operators in Poland - Droneradar.

Among other things, the system allows fast, digital, non-verbal communication between air traffic controllers and drone operators. With the PansaUTM system, drone operators may quickly check flight opportunities in a given area, digitally file a flight plan and obtain permission to fly when it does not compromise the safety of manned traffic. PansaUTM provides air traffic controllers with the information about the unmanned flights planned near airports, enabling them to give permissions to flights, similarly as in the case of manned aviation.

The PansaUTM system has successfully passed the accreditation process conducted by PANSA and supervised by the Polish Civil Aviation Authority. In the period between March and July 2020, PANSA operationally implemented the PansaUTM system in the controlled zones of airports in Bydgoszcz, Gdańsk, Katowice, Kraków, Lublin, Łódź, Modlin, Olsztyn, Poznań, Rzeszów, Szczecin, Wrocław and Zielona Góra, as well as in the FIS sectors in Gdańsk, Kraków, Olsztyn, Poznań and Warsaw. It means that the whole of Poland is within reach of PansaUTM services.

The PansaUTM system won in two categories of the ATM Awards 2020 competition, organised by European magazines Air Traffic Management and Unmanned Airspace. PANSA was awarded the ATM Awards 2020 main prize and won the first place in the "ANSP UTM projects" category.



## Coordination of flights of unmanned aerial vehicles (UAV) by PANSA

In 2020, as part of the pre-tactical coordination of UAV flights, 14,500 permissions were issued for UAV flights within the Visual Line of Sight (VLOS) and Beyond Visual Line of Sight (BVLOS) in controlled traffic region (CTR), maintaining procedures for handling such flights (also H24 (24h/day) for operational flights). Permissions from January to October 2020 were issued in a hybrid format - i.e. in a mixed formula - by the PansaUTM system when the system was implemented at a given airport traffic control tower. In the absence of implementation in the form of so-called manual coordination. Since 2021, the process was entirely planned under the digital coordination model.

As part of the tactical coordination of UAV flights with operational personnel, the mandatory coordination via the PansaUTM System was progressively extended to more TWR authorities in 2020. As of October 2020, all TWR bodies have been put into operation. In addition, as part of the PANSA obligation to report UAV flights through the PansaUTM system and the Droneradar mobile application integrated therewith, the number of reported flights reached nearly 300,000 operations in 2020.



## Common Airspace Tool (CAT)

The CAT system makes it possible to accept and verify reservations of airspace structures as well as to streamline the process of creating and publishing the Airspace Use Plan (AUP) – one of the key aviation documents used by the Polish sky users. The CAT system allows efficient management of structures in accordance with the reservations of airspace structures (AFUA) concept, at pre-tactical level and in real time – their activation, deactivation or change of altitude parameters. The CAT system works closely with Network Manager, the European air traffic management system, and through a B2B Web Services connection, automatically exchanges all information on the activity of the structures included in the AUP.

The CAT system is a major convenience for airspace managers and users. Thanks to a modern, freely accessible web interface, i.e. Collaboration Human Machine Interface, anyone using services offered by PANSa may see – in the form of a map – all current and planned, even in the long term, structures and obtain information thereof. It is a secure, complete, flexible, coherent and open solution for data exchange with other systems, operationally used by air traffic services: air traffic controllers and FIS (Flight Information Service), and, since 2005, by the Airspace Management Cell (AMC) of PANSa. Since 2008, the CAT system has been used by the Polish Air Force.



TRAFFIC

## TRAFFIC System

The TRAFFIC system is a tool used to validate and verify the operational data contained in flight plans before sending them to ATM systems. The aforesaid process is carried out in both the pre-tactical and tactical phases of the flight plan processing. The TRAFFIC system is a solution that has allowed PANSA to face the challenges generated by growing air traffic in a smooth and user-friendly manner.



PANDORA

## PANDORA System

PANDORA is a system for displaying aeronautical information such as, among other things, maps, meteorological data, frequencies, photographs, aircraft technical data and other documents. The PANDORA system supports air traffic controllers and other operational staff. It provides real-time information thanks to its own internal database, while giving the possibility to cooperate with other systems and use their external sources of information.

## A-CDM TERMINUS System

The system has been developed in collaboration with Warsaw Chopin Airport. A-CDM TERMINUS is the Advanced/Airport-Collaborative Decision Making (CDM) system developed by PANSO. The A-CDM TERMINUS system allows to plan and manage the traffic situation at the airport well in advance. A-CDM as a concept and TERMINUS as the Target Startup Approval Time Generator (TSAT) allow the prediction and flow of information regarding aircraft handling in the aerodrome area (landing, completion of ground handling, take-off). Close collaboration of all partners using such information contributes to the streamlining of the entire process and thus translates into operational, financial and environmental gains.

The A-CDM system means that key partners work together on flight operations within the airport. It includes such activities as ground handling and common projections, planning and determination of optimal and accurate aircraft engine start times. TSAT is transmitted to the European air traffic management system Network Manager B2B Web Services, with which the A-CDM TERMINUS system is connected. Entering correct data on the current and forecast traffic situation improves the correct management and regulation of air traffic flows in directions leading to and from the airport.

The A-CDM system has a positive impact on the reduction of delays, noise and fuel consumption, translating into tangible benefits for airspace managers, airports, carriers and their operators.

**The A-CDM system received a distinction in the 19th edition of Technology Competition Leader of the Year 2020 organised by "Gazeta Bankowa", in the Industry 4.0 category.**



## Aeronautical inspection

PANSA is responsible for the proper operation of about 150 ground-based air traffic safety devices and the validation of instrumental aeronautical procedures in Poland. Operating since 1963, the Polish Air Navigation Services Agency (PANSA) carries out control and measurement flights. In 2020, PANSA Flight Inspection used Beechcraft King Air 350 and L-410 UVP-E 15 "Turbolet" control and measurement aircrafts, equipped with AD-AFIS-130 real-time analysis systems.

PANSA Flight Inspection performs implementation, periodic, ad hoc and category inspections and measurements of CNS infrastructure: instrument landing systems (ILS CAT 1, 2, 3), VHF Omnidirectional Radio Range (VOR and DVOR) and non-directional radio beacons (NDB), distance measuring equipment (DME), navigation light systems (approach light systems ALS and runway light systems) and precision approach path indicator (PAPI).

PANSA Flight Inspection is the only unit in Poland to check new and existing instrumental flight procedures – conventional and area navigation (RNAV) based on DME-DME and Global Navigation Satellite Systems (GNSS). Due to the progressive implementation of the Ground Based Augmentation Systems (GBAS) in Europe, which are used for precision landing of aircraft based on



satellite technology, aerial inspection services of such systems and validation of the associated flight procedures will also be provided.

In 2020, PANSA Flight Inspection also carried out foreign orders for calibration flights for two European air navigation service providers, i.e. airport manager and ILS system contractor. The first order consisted in the measurements at the NATO base in Lithuania, at Šiauliai EYSA. Another order was executed for Cyprus DCA – validation of approach procedures at Larnaca LCLK and Paphos LCPH airports, and for Moldova MoldATSA, where periodic aerial checks of Chisinau's two ILS/DMEs and DVOR/DMEs were carried out as well as checks of visual aids to navigation (including four PAPIs) on both runways of Chisinau International Airport LUKK. The latest order referred to survey flights for Oro Navigacija under a newly signed 3-year contract following a successful tender.

## Airport coordination

In 2020, PANSA took on the role of flight schedules coordinator. Coordination shall be performed on the basis of EU and Polish legislation as well as the guidelines of the International Air Transport Association (IATA) contained in the Worldwide Slot Guidelines (WSG) and the Standard Schedules Information Manual (SSIM).

Schedule coordination shall be based on the independence, neutrality, non-discrimination and transparency of the coordinator towards all air carriers. Kraków-Balice John Paul II International Airport was the first airport which, by decision of the President of the CAA, has been designated to be coordinated by PANSA and which has become a coordinated airport (level 3) as of 29 March 2020.

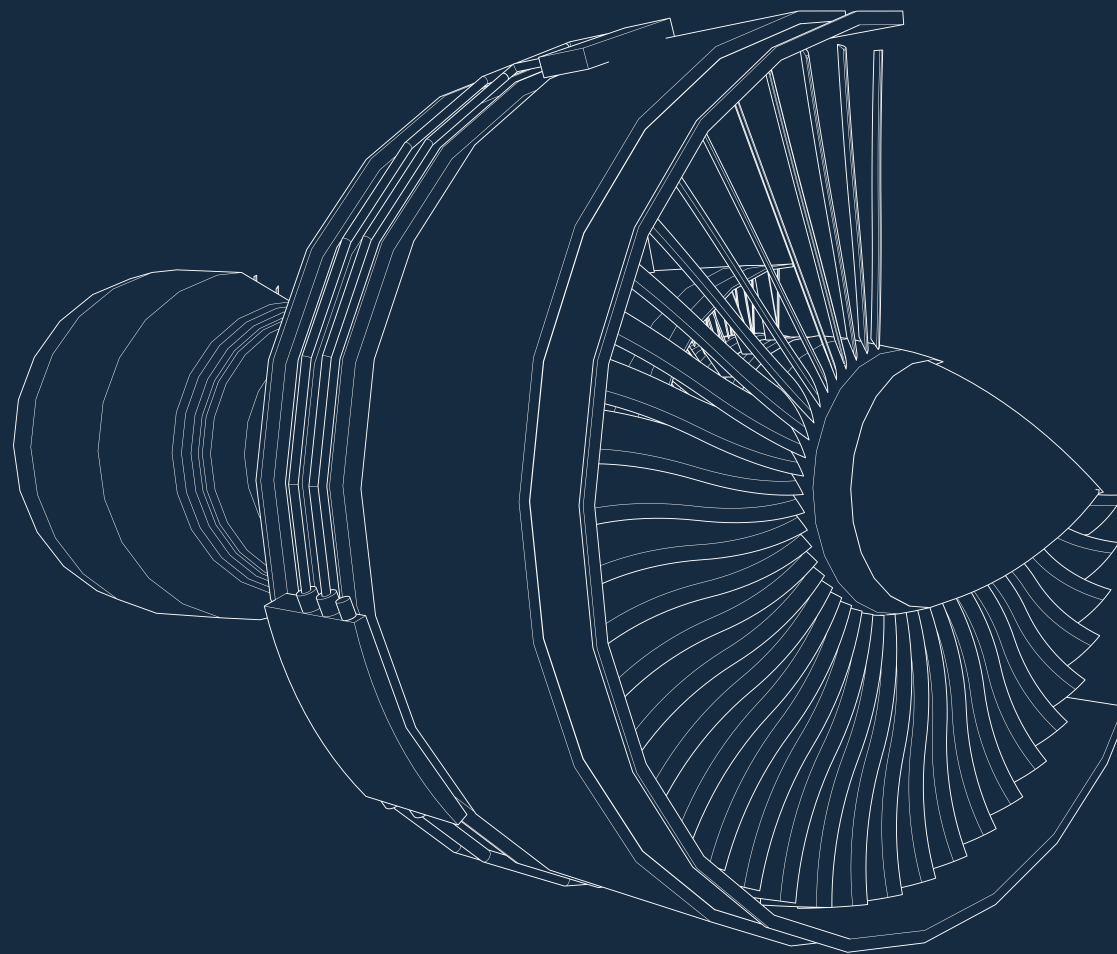
**The strategic and long-term business objective of the Polish Air Navigation Services Agency is to develop and improve coordination competences to meet future challenges related to the limited airport capacity.**

# Aviation publications

One of organisational units of Polish Air Navigation Services Agency is the Aeronautical Information Services (AIS). AIS Poland is responsible for providing aeronautical data and information necessary to ensure the safety, regularity and efficiency of air navigation in FIR Warsaw. For this purpose, AIS Poland prepares aeronautical in-formation products, which include:

- Aeronautical Information Publication (AIP), including AIP Amendments and Supplements;
- Aeronautical Information Circular (AIC);
- Aeronautical maps;
- NOTAMs;
- Digital datasets.

In 2020, 9,617 copies of VFR maps available in 3 paperback versions were sold. The safety of airspace users depends on the work of the Aeronautical Information Services (AIS), digital aeronautical information management based on the Aeronautical Information Exchange Model (AXIM) and on the quality of such services.

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## Data

**Radar data** - by providing surveillance services, PANSa exercises continuous monitoring of aircraft traffic in the Polish airspace. On the basis of the information recorded by surveillance systems, hyperbolic systems, information-dependant systems from aircraft and data from flight plans, air traffic services have a complete picture of the current traffic situation in the Polish sky.

**Meteo data** - PANSa owns and operates an automatic meteorological measurement system at Warsaw Chopin Airport, which records such parameters as RVR, cloud base height, wind, pressure and temperature. The Polish Air Navigation Services Agency also holds archived weather data for selected regional airports, which may be used, for example, to conduct climate research.

**Aviation data** - PANSa has the possibility to generate data and statistics on performed air operations in the Polish airspace and at national airports.

## Consultancy services

Consultancy services offered by PANSa are tailored to customers' needs and performed by experienced specialists with many years of experience working for PANSa and other aviation institutions. The catalogue of consulting services is constantly growing to allow PANSa effectively carry out the tasks and achieve the objectives set by clients. PANSa currently offers consultancy services in the following areas, i.e.:

- airspace design;
- design, validation and operational maintenance of instrument flight procedures;
- integration and management of unmanned aerial vehicles (UAVs).



## NaviHub

PANSA co-creates the PANSA R&D Centre - NaviHub - the project consisting of a network of organisations, places, equipment (Competence Centre), together with data, knowledge and a laboratory for digital simulations (NaviLab) and a test airport (NaviSpot). NaviHub is the result of collaboration between people and institutions aimed at creating, implementing and testing innovative aerospace projects under field conditions.

In the Competence Centre at our Air Traffic Control Centre in Poznań, we are able to offer our clients R&D services in the area of:

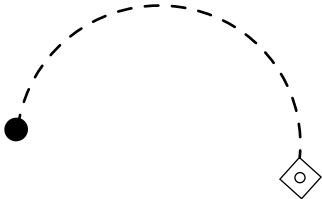
1. Software development, testing and integration of ATM and UTM systems.
2. Cyber security of aeronautical communication and data exchange systems.
3. Interactive technical documentation (instructions, descriptions, illustrations).
4. System and process analytics.
5. Managing complex projects.
6. The collection, integration, processing, analysis and distribution of aeronautical data.

In **NaviLab** at our Air Traffic Control Centre in Poznań, we offer simulations using systems applied in air traffic management for airspace optimisation. Therefore, we are able to test the logic and design the infrastructure for flights on the basis of real traffic as well as virtually introduce more aircraft in a given sector of space to study the impact on safety, capacity and the external environment.

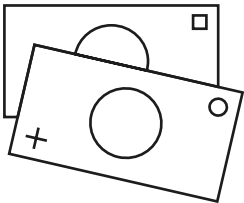
In **NaviSpot** at our test airfield in Kąkolowo, we provide space for research, testing, validation, verification and certification of technological solutions prior to their commercial implementation in pilots and operations.

The following activities are undertaken in NaviSpot:

1. Development of unmanned aircraft and equipment components.
2. Testing, validation and technical verification of infrastructure solutions.
3. Integration and compatibility of flight data exchange with air traffic control systems.
4. Test flights to check the repeatability and correctness of the mission.



Financial results



# General information

## Basis of preparation of the financial statements

The Agency, in accordance with the Act of 8 December 2006 on the Polish Air Navigation Services Agency (Journal of Laws of 2017, item 1967 as amended), prepares financial statements for statutory purposes in accordance with IFRS as approved by the EU.

## Measurement currency and financial statement currency

The measurement currency of the Agency and the reporting currency is the Polish zloty (PLN), and all values, unless otherwise indicated, are presented in thousands of Polish zlotys ('000 PLN).

## Principles of financial management

The Agency, in accordance with the PANSA Act, conducts inde-

pendent financial management, taking into account EU law, international agreements and EUROCONTROL provisions regarding the air navigation charges system, including the principles of establishing and collecting charges and issuing invoices by CRCO.

By virtue of the Act of 8 December 2006 on the Polish Air Navigation Services Agency, the net loss of the Polish Air Navigation Services Agency for the financial year is covered from the reserve fund. If the net loss is higher than the reserve fund, the part of the loss not covered by the reserve fund will be covered by the initial fund. Whereas the Agency's net profit for the financial year is allocated to the reserve fund or other funds created on the basis of separate provisions.

Operating expenses are covered by the generated revenues. The sources of revenues are:

revenues from services provided, interest on bank deposits, a specific grant from the state budget, other revenues including funds obtained as non-returnable aid.

The main source of the revenue generated from sales constitutes the revenue from navigation activities, which includes charges levied for the provision of air navigation services (Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down the Single European Sky performance and charging system and repealing Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013). The amount of the revenue generated due to the provision of navigation services (en-route and terminal services) depends, among other things, on the level of unit rates established annually used for charges for navigation services provided (unit rate).

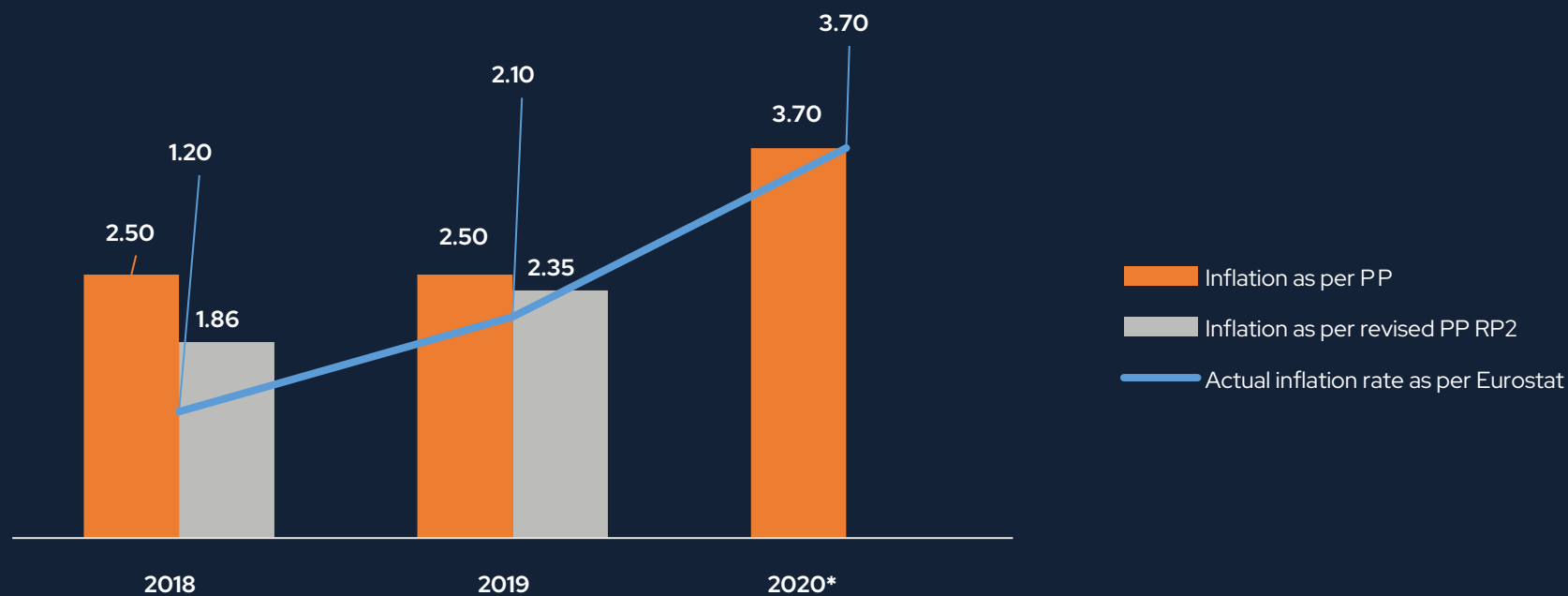
The calculation of revenue from the sale of navigation services provided by the Agency is based on:

- the number of en-route operations, weight of the aircraft and distance flown over the territory of Poland, as the basic determinants for the number of the calculated service units (SU) in the en-route traffic navigation and navigation for take-offs and landings;
- the number and weight of aircraft landing at "controlled" Polish airports as the basic figures for the number of service units (SU-L) in terminal services;
- the effects of settlement for carry-overs under applicable laws;
- further breakdown of the revenue from navigation activities is determined by the type of fee charged depending on the type of navigation service provided.

# Inflation

Average annual inflation in 2020, according to EUROSTAT data from April 2021, was 3.7% (the inflation observed in 2019 was 2.1%).

**Fig. 16** *Planned vs Actual inflation rates*

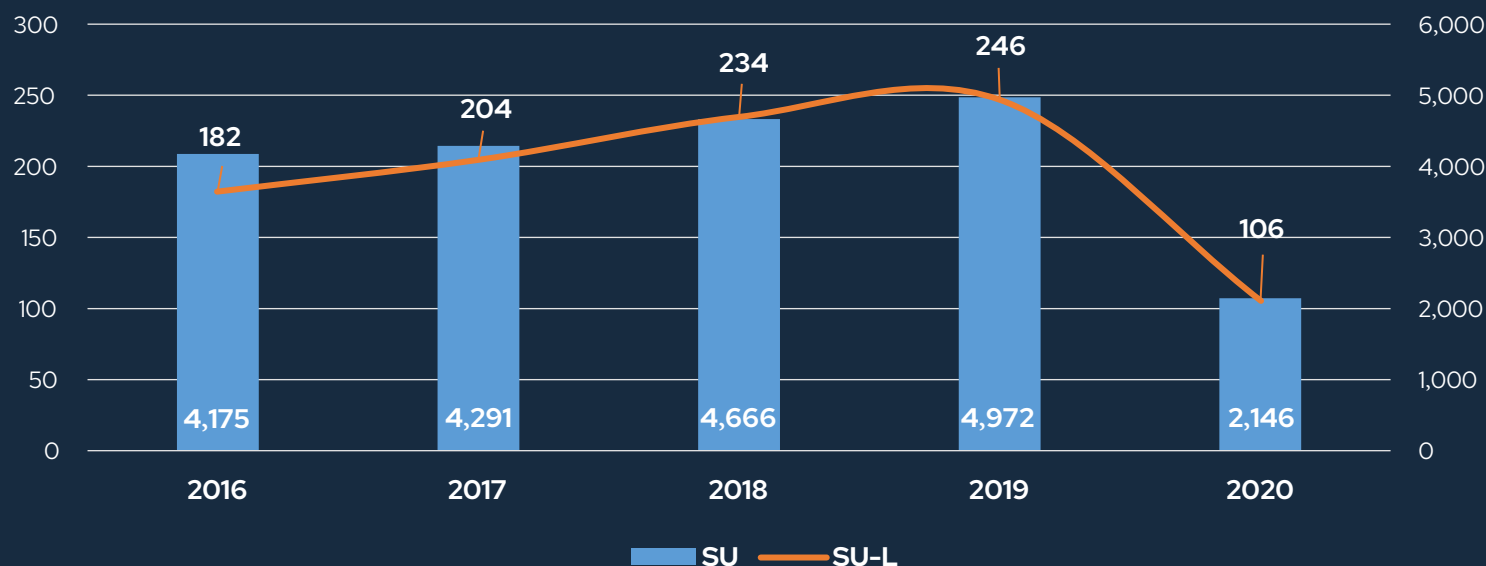


\* according to the draft revision of the PP of 09/2021

## Service units

In 2020, a sharp decline in terms of both the number of passengers served and the number of flights and service units was recorded. The crisis in the airline industry was caused by the COVID-19 pandemic, which resulted, among other things, in the introduction of the restriction on domestic and international passenger flights to/from Poland as of 15 March 2020. As a result of the pandemic, travelling was restricted and borders between most countries were temporarily closed. Air traffic to/from Poland resumed as late as in the second half of June 2020, with the gradual restoration of first domestic and then international flights. Until the end of the year, there were restrictions and limitations on flights to selected countries, and traffic flows in Europe largely avoided Polish airspace.

**Fig. 17** Traffic by services ('000)

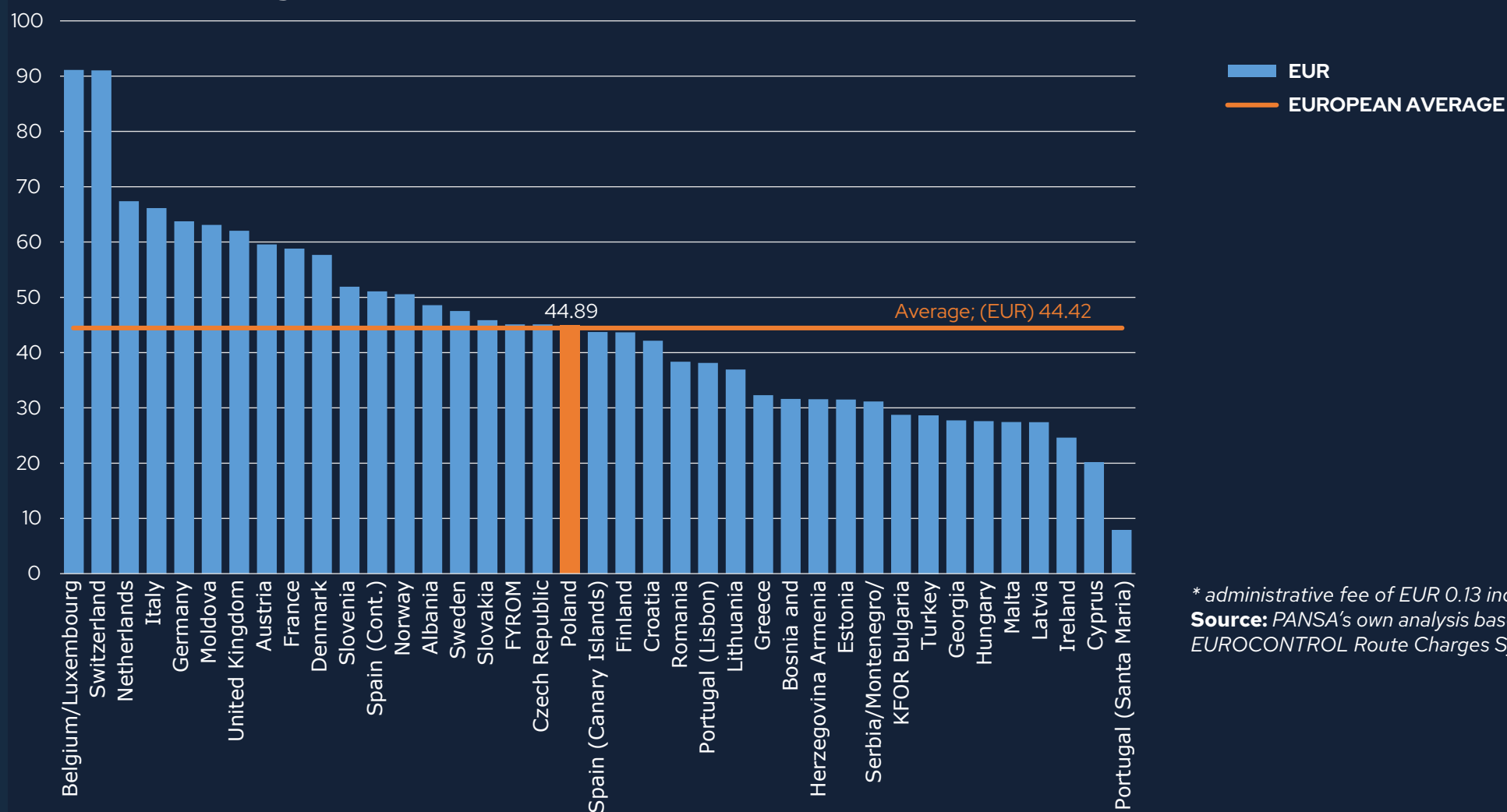


\*Data on terminal services include traffic handled by PANSA.

# Unit rates for air navigation services

The average value of the en-route unit rate in 2020 in EUROCONTROL member states was EUR 44.42.  
The Polish unit rate for en-route navigation services was EUR 44.89.

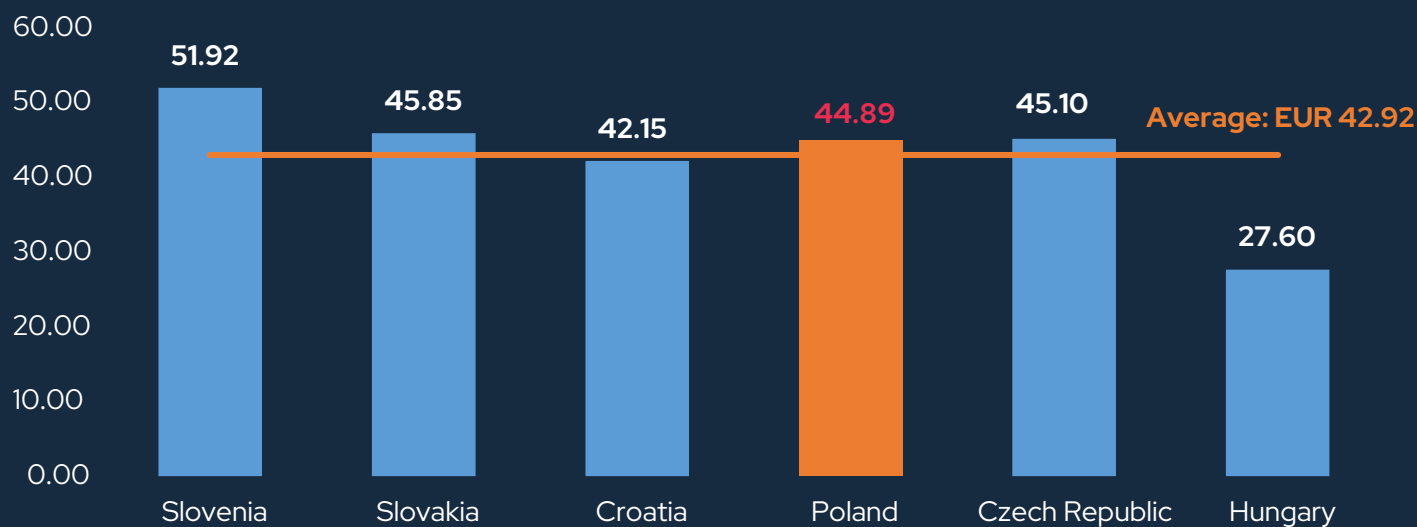
**Fig. 18** *En-route unit rate in selected EUROCONTROL Member States\**



\* administrative fee of EUR 0.13 included.  
**Source:** PANSa's own analysis based on:  
 EUROCONTROL Route Charges System.

For the purpose of benchmarking, the PRU/EUROCONTROL has divided European ANSPs into groups. PANSa was assigned to „Central Europe”, a group of countries operating under similar economic conditions and a similar operational environment. Members of the Group are Croatia, the Czech Republic, Slovakia, Slovenia, Hungary and Poland. In 2020, the unit rate of the en-route navigation charge for Poland was EUR 44.89, with a group average of EUR 42.92.

**Fig. 19** *En-route Unit Rate 2020 (EUR)*



Source: Own elaboration on the basis of EUROCONTROL/PRU

# Report on PANSA's financial activities

In 2020, the Agency, in accordance with the Accounting Policy, presented a part of the profit on actuarial valuation under the item other comprehensive net income for the reporting period. In addition, in 2020, the Agency changed the rules of presentation of short-term lease liabilities in accordance with IFRS 16. For clarity and comparability with the 2020 figures, the 2019 financial figures included in this report have been restated accordingly.

**Tab. 12** *Statement of comprehensive income ('000 PLN)*

| Statement of comprehensive income                               | For the year ended<br>31.12.2020 | For the year ended<br>31.12.2019 |
|-----------------------------------------------------------------|----------------------------------|----------------------------------|
| Sales revenues                                                  | 771,342                          | 951,294                          |
| Operating expenses                                              | 885,614                          | 927,443                          |
| <b>Profit (loss) on sales</b>                                   | <b>-114,272</b>                  | <b>23,851</b>                    |
| Other operating revenues                                        | 32,473                           | 32,325                           |
| <i>including: EU grants and donations from the state budget</i> | 29,056                           | 27,549                           |
| Other operating expenses                                        | 13,582                           | 39,042                           |
| <b>Operating profit (loss)</b>                                  | <b>-95,381</b>                   | <b>17,135</b>                    |
| Financial revenues                                              | 15,089                           | 6,385                            |
| Financial expenses                                              | 20,736                           | 5,650                            |
| <b>Gross profit (loss)</b>                                      | <b>-101,029</b>                  | <b>17,870</b>                    |
| Income tax expense                                              | -14,863                          | 6,699                            |
| <b>Net profit (loss)</b>                                        | <b>-86,166</b>                   | <b>11,171</b>                    |
| Items of other comprehensive income for the reporting period    | 2,365                            | -4,379                           |
| <b>Total comprehensive income</b>                               | <b>-83,800</b>                   | <b>6,792</b>                     |

## Sales revenues

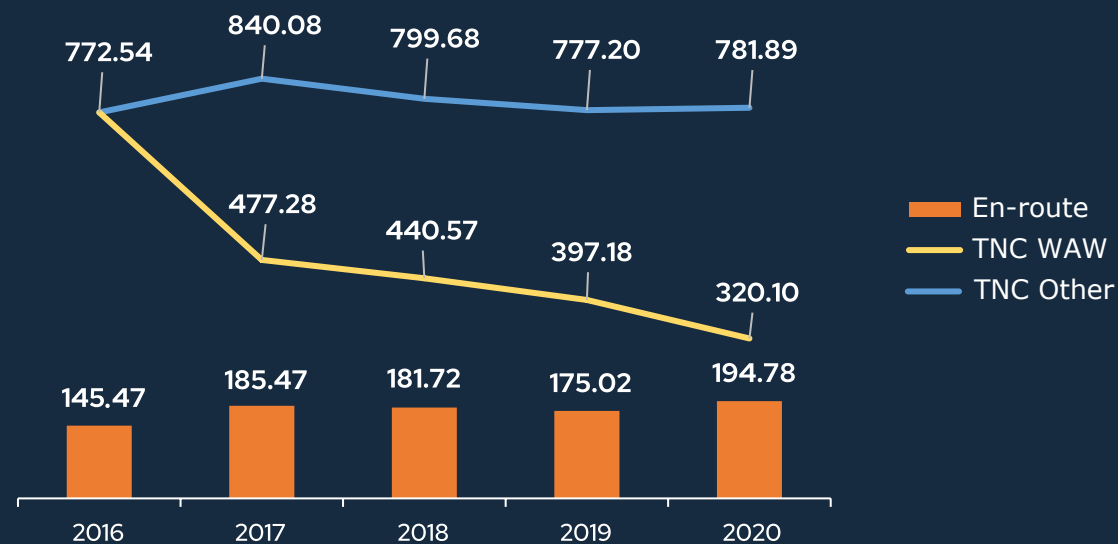
The en-route unit rate is used to calculate revenue from transit flights and revenue from navigation for take-offs and landings (arrivals). The product of unit rate and the number of service units for that area, after adjustments due to EU legislation on navigation charges, represents the value of revenue for en-route services in controlled airspace. The unit rate of the en-route charge was approved at PLN 194.78 and was valid from 1 January to 31 December 2020.

The terminal unit rate is used to calculate terminal navigation revenue. The product of unit rate and the number of service units for that area, after adjustments due to the EU legislation on navigation charges, represents the value of revenue for terminal services.

In 2020, there were two zones for terminal navigation services:

- zone 1 - Warsaw (PLN 320.10),
- zone 2 - the remaining 14 airports (PLN 781.89).

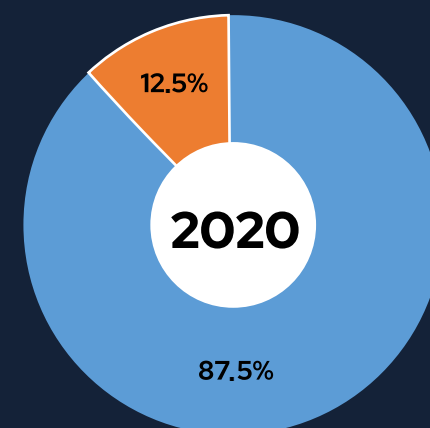
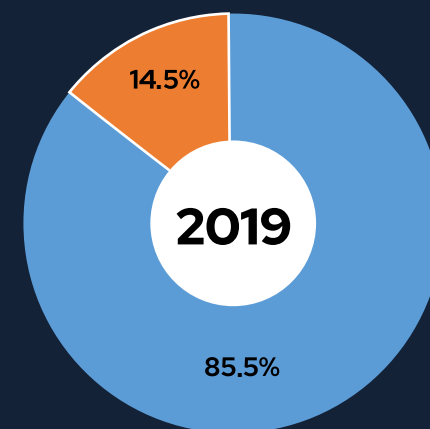
**Fig. 20** Navigation unit rates (PLN)



The revenue from en-route charges due to flights in Polish airspace is calculated, invoiced and collected in Euro on behalf of PANSA by CRCO, the organisational unit of EUROCONTROL. The terminal charges for navigation services for flights served by PANSA, is charged in PLN and collected by PANSA.

| <b>Tab. 13 Sales revenue ('000 PLN)</b>                        | <b>For the year ended 31.12.2020</b> | <b>For the year ended 31.12.2019</b> |
|----------------------------------------------------------------|--------------------------------------|--------------------------------------|
| <b>Navigation services, including:</b>                         | <b>762,070</b>                       | <b>943,522</b>                       |
| En-route navigation, including:                                | 625,258                              | 798,019                              |
| Balance of carry - overs                                       | 207,384                              | -68,363                              |
| Terminal navigation, including:                                | 122,385                              | 130,823                              |
| Balance of carry - overs                                       | 62,781                               | -16,514                              |
| Grants for exempted flights                                    | 14,427                               | 14,680                               |
| <b>Non-navigation services, including, but not limited to:</b> | <b>9,220</b>                         | <b>7,759</b>                         |
| Measurement of meteorological parameters                       | 1,771                                | 1,712                                |
| Radar data                                                     | 2,844                                | 2,134                                |
| <b>Sale of materials</b>                                       | <b>52</b>                            | <b>13</b>                            |
| <b>Total</b>                                                   | <b>771,342</b>                       | <b>951,294</b>                       |

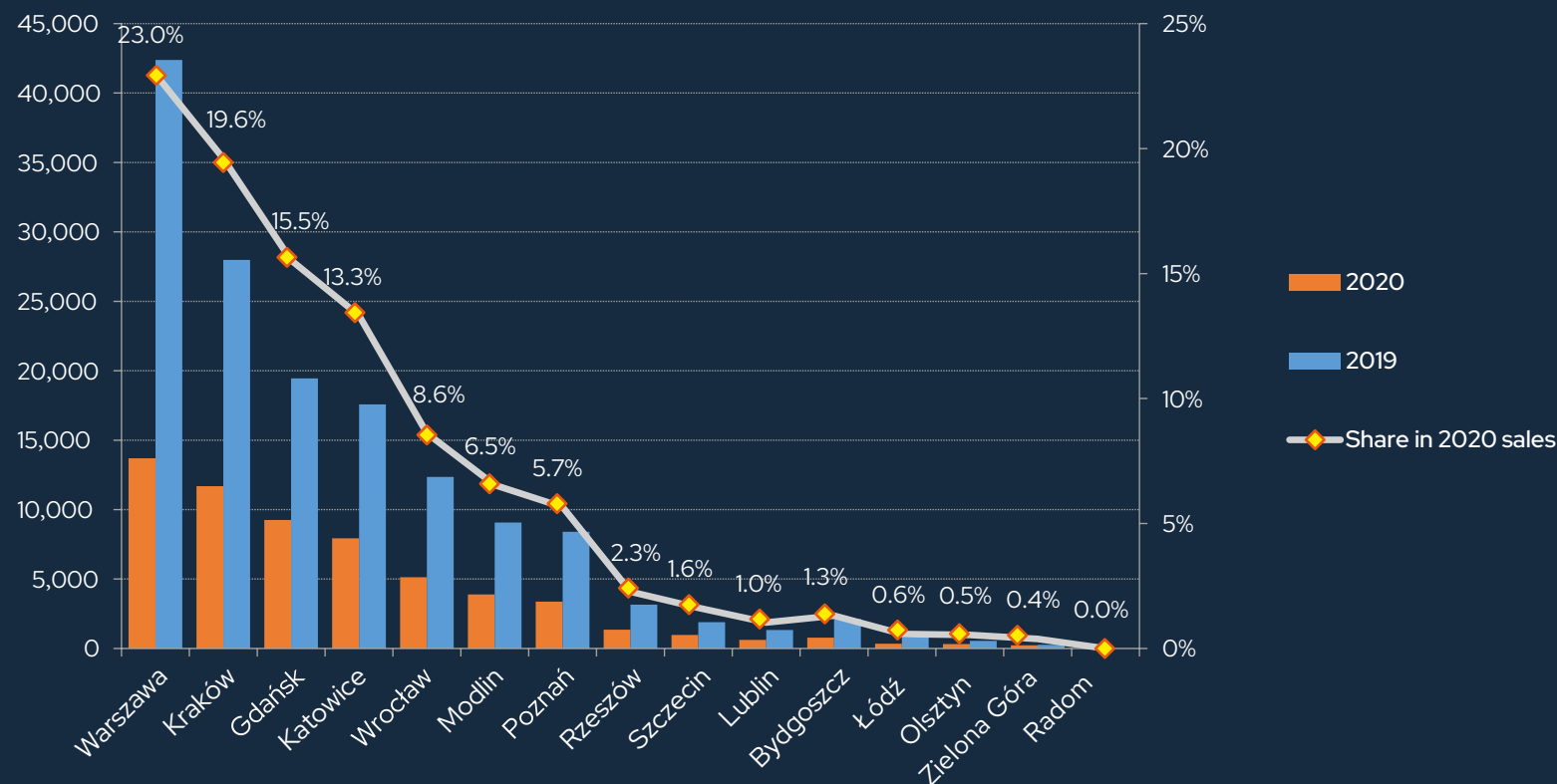
**Fig. 21** Invoiced sales revenues by services



■ En-route navigation  
■ Terminal navigation (TNC)

The analysis of the PANSA's revenue structure shows that the dominant share in total revenues was Sales revenues, which in 2020 amounted to kPLN 771,342. The revenue generated at this level was primarily derived from navigation services provided by the Agency, including en route and terminal services. It should be emphasised that in 2020 the balance of adjustments for carry-overs, including the estimated and recognised value of the lost revenue mechanism in the total amount of kPLN 237,259, had a significant impact on the recognised revenue of the Agency. The value of the estimated adjustments of the lost revenue in 2020, shall be subject to settlement with the airspace users in subsequent years, starting from 2023. In 2020, the sale revenue of navigation services accounted for 93% of the total revenue invoiced by the Agency.

**Fig. 22** *TNC invoiced sales by airports*

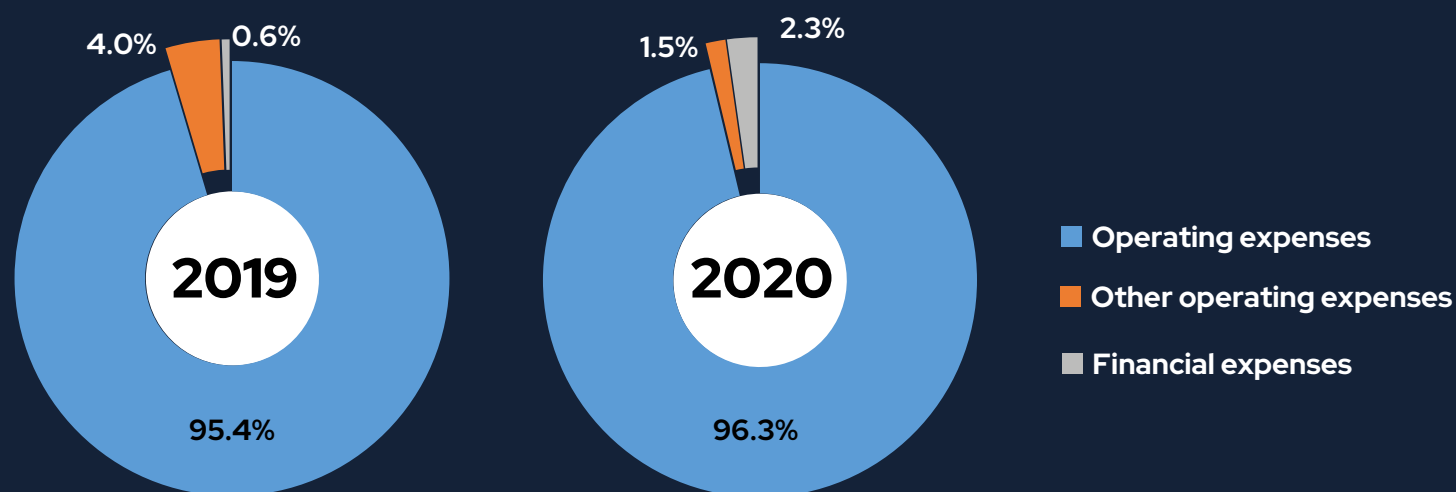


## Total costs

The total costs incurred by PANSa within the twelve months of 2020 amounted to kPLN 919,933.

The analysis of the costs structure from PANSa's operations shows that the major share in total costs were the operating expenses, which in the twelve months of 2020 amounted to kPLN 885,614.

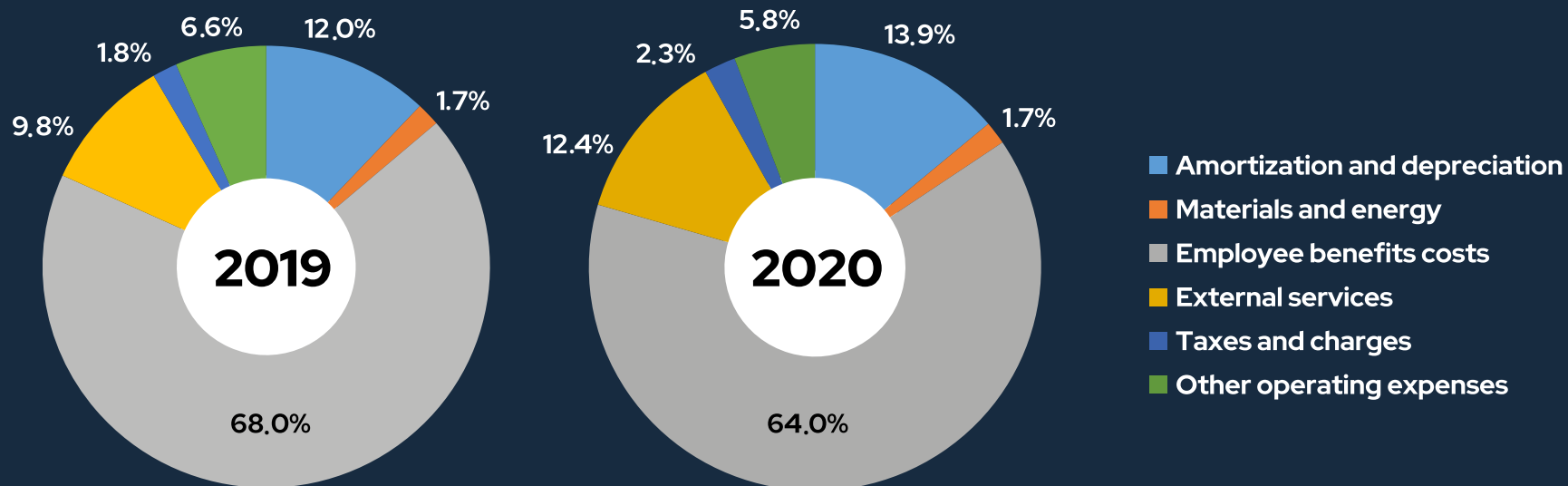
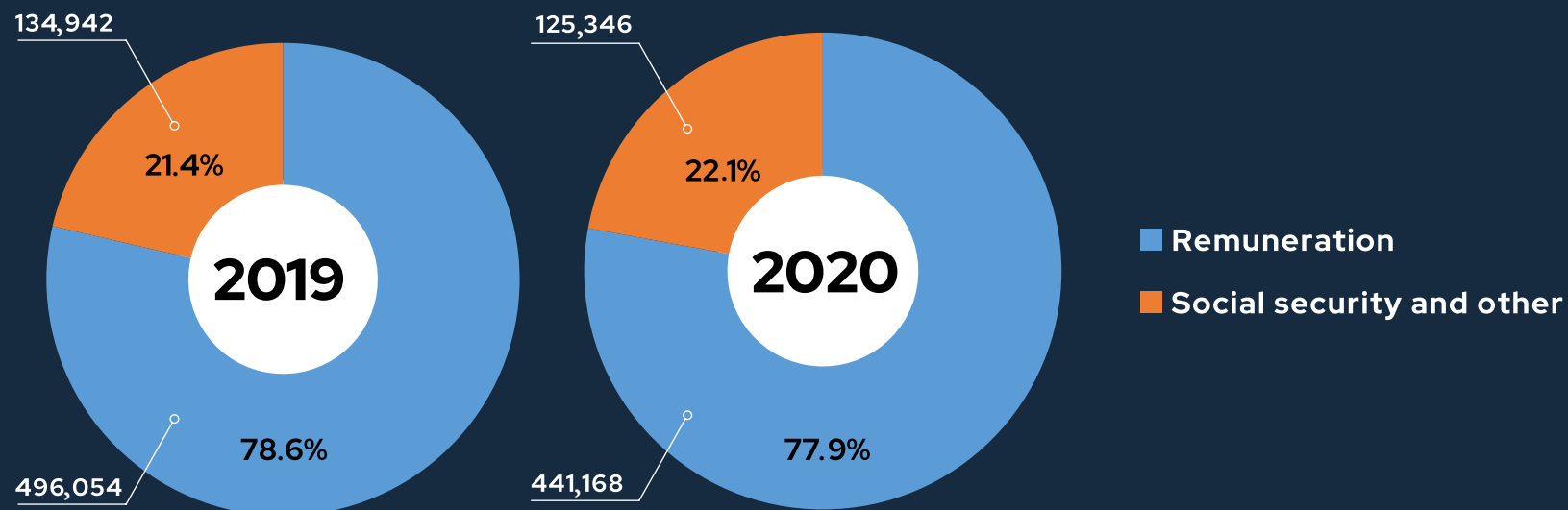
**Fig. 23** *Total costs*



## Operating expenses by type

Operating expenses in 2020 decreased by kPLN 41,828 in relation to the previous year.

The involvement of PANSa in the implementation of strategic tasks in 2020 resulted, on the one hand, in the need to ensure and properly organise human resources and, on the other hand, the need to optimise costs, including staff costs, due to the limited possibility of generating revenue as a result of the COVID-19 pandemic. The largest share in the cost structure are employee costs, resulting from the provision of highly specialized services by the Agency's employees. Additionally, an increased share of depreciation costs as a result of the long-term investment process prior to the pre-pandemic period was observed in 2020 as well as an increasing share of external services costs, which includes the costs which are partially controlled by the Agency.

**Fig. 24 Operating expenses by type****Fig. 25 Employee benefits costs**

## Operating expenses by service

In compliance with the Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the single European sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013), the costs of providing air navigation services are broken down into: staff, other operating costs, depreciation, cost of capital (off-balance sheet item) and exceptional items.

The personnel costs (excluding training costs) are included in the staff costs. Other operating costs include the following categories of costs: consumption of materials and energy, external services, taxes and charges, other expenses, training in employee costs, other operating expenses and eligible financial costs. Lease payments resulting from the application of IFRS16 are also presented in other operating expenses.

The portion of depreciation resulting from the application of IFRS16 is not presented under depreciation. The cost of capital is not calculated on assets recognised due to the application of IFRS16.

**Tab. 14** *Operating expenses by service*

| Specification according to the "Regulation" | Constituent items                      | En-route navigation | Terminal navigation |
|---------------------------------------------|----------------------------------------|---------------------|---------------------|
| <b>Staff</b>                                | <b>Total, including:</b>               | <b>474,074</b>      | <b>81,110</b>       |
|                                             | Operating expenses                     | 472,320             | 80,810              |
|                                             | Other operating expenses               | 1,754               | 300                 |
| <b>Other operating costs</b>                | <b>Total, including:</b>               | <b>79,850</b>       | <b>10,820</b>       |
|                                             | Operating expenses                     | 76,238              | 12,513              |
|                                             | Other operating and financial expenses | 9,290               | -1,321              |
|                                             | Other operating and financial revenues | -5,678              | -372                |
| <b>Depreciation</b>                         | <b>Operating expenses</b>              | <b>98,585</b>       | <b>15,552</b>       |
| <b>Cost of capital</b>                      |                                        | <b>28,950</b>       | <b>4,196</b>        |
| <b>Exceptional items</b>                    |                                        | <b>0</b>            | <b>0</b>            |
| <b>Total costs</b>                          |                                        | <b>681,458</b>      | <b>111,677</b>      |

\* Due to the ongoing evaluation process of the draft revised PP RP3 for 2020-2024, the presented data are binding as of the date of the report and subject to change.

# Statement of financial position

**Tab. 15** PANSA's balance sheet total as for December 31, 2020 amounted to kPLN 1,973,529

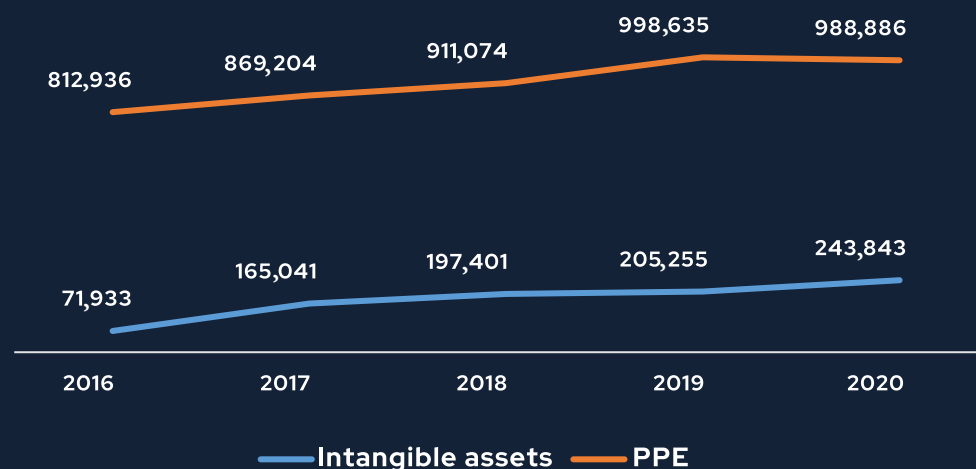
| Statement of financial position as at                | 31.12.2020       | 31.12.2019       |
|------------------------------------------------------|------------------|------------------|
| <b>Non-current assets</b>                            | <b>1,585,962</b> | <b>1,324,850</b> |
| Intangible fixed assets                              | 243,843          | 205,255          |
| Property, plant and equipment                        | 988,886          | 998,635          |
| Right-of-use assets IFRS 16                          | 47,091           | 50,469           |
| Long-term receivables                                | 135              | 135              |
| Deferred tax assets                                  | 82,953           | 68,645           |
| Long-term assets due to adjustments for carry-overs  | 221,832          | 798              |
| Other accruals                                       | 1,222            | 913              |
| <b>Current assets</b>                                | <b>387,567</b>   | <b>685,944</b>   |
| Inventories                                          | 241              | 141              |
| Trade and other receivables                          | 150,516          | 193,293          |
| Income tax receivables                               | 9,632            | 5,820            |
| Short-term assets due to adjustments for carry-overs | 7,353            | 3,281            |
| Short-term accruals                                  | 3,256            | 3,273            |
| Cash and cash equivalents                            | 214,147          | 477,712          |
| Assets available-for-sale                            | 2,421            | 2,423            |
| <b>Total Assets</b>                                  | <b>1,973,529</b> | <b>2,010,794</b> |

| Statement of financial position as at                     | 31.12.2020       | 31.12.2019       |
|-----------------------------------------------------------|------------------|------------------|
| <b>Equity, including:</b>                                 | <b>937,628</b>   | <b>1,021,429</b> |
| Statutory fund                                            | 475,022          | 475,022          |
| Reserve fund                                              | 550,786          | 539,615          |
| Retained earnings                                         | 0                | 0                |
| Accumulated other comprehensive income                    | -2,014           | -4,379           |
| Profit (loss) for the financial year                      | -86,166          | 11,171           |
| <b>Long-term liabilities</b>                              | <b>709,672</b>   | <b>722,700</b>   |
| Long-term provisions                                      | 306,189          | 309,029          |
| Other long-term accruals                                  | 266,507          | 266,358          |
| Long-term liabilities due to adjustments for carry-overs  | 27,840           | 100,099          |
| Liabilities due to IFRS 16                                | 43,798           | 46,378           |
| Liabilities due to loan                                   | 64,501           | 0                |
| Other long-term liabilities                               | 836              | 837              |
| <b>Short-term liabilities</b>                             | <b>326,229</b>   | <b>266,665</b>   |
| Short-term provisions                                     | 10,767           | 18,496           |
| Trade and other liabilities                               | 117,150          | 127,919          |
| Short-term liabilities due to adjustments for carry-overs | 103,687          | 58,134           |
| Liabilities due to IFRS 16                                | 5,005            | 4,458            |
| Short-term accruals                                       | 89,621           | 57,657           |
| <b>Total Liabilities</b>                                  | <b>1,973,529</b> | <b>2,010,794</b> |

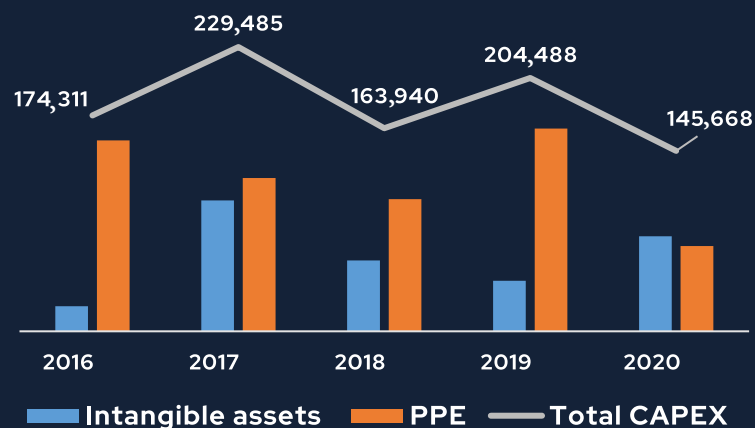
## Non-current assets

Non-current assets as for December 31, 2020 represented 80.0% of the total balance sheet, while the remaining 20.0% represented current assets. The analysis of the structure of assets held by the Polish Air Navigation Services Agency in 2020 shows that the Agency had at its disposal tangible fixed assets (PPE) in the total amount of kPLN 988,886, which consisted mainly of technical equipment and machinery, buildings and structures, land (including rights of perpetual usufruct of land) and tangible fixed assets under construction.

**Fig. 26 PPE & Intangible assets**



**Fig. 27 CAPEX**



Expenditures on modernisation and construction of modern CNS/ATM infrastructure and facility incurred by PANSA in 2020 amounted to approximately kPLN 145,668. The highest expenditures were on tasks performed in the Capacity area, which primarily concerned the implementation of investments in air traffic management systems.

Due to the long-time horizon of the ongoing investment tasks, a slight decrease in fixed assets under construction is visible. At the end of 2020, the Agency held tangible fixed assets of a total amount of kPLN 988,886, which consisted mainly of technical equipment and machinery, buildings and structures, land (including rights of perpetual usufruct of land and tangible fixed assets under construction.

| <b>Tab. 16 Property, plant and equipment</b> | <b>Net value as at 31.12.2020</b> | <b>Net value as at 31.12.2019</b> |
|----------------------------------------------|-----------------------------------|-----------------------------------|
| Land & Perpetual usufruct of land            | 160,196                           | 160,193                           |
| Buildings and structures                     | 275,491                           | 269,834                           |
| Machinery and equipment                      | 368,394                           | 373,301                           |
| Fixed assets under construction              | 143,297                           | 151,445                           |
| Vehicles, other non-current assets           | 41,509                            | 43,862                            |
| <b>Total</b>                                 | <b>988,886</b>                    | <b>998,635</b>                    |

## Current assets

Cash and Cash Equivalents were the most significant current asset item in 2020. The balance of cash and cash equivalents recorded as for December 31, 2020 amounted to kPLN 214,147 and was lower by kPLN 263,565, than at year-end 2019. Such a substantial decrease was caused by the COVID-19 pandemic, which significantly reduced the ability of the Agency to generate revenue in 2020.

## Trade and other receivables

In accordance with the accounting policy in force, the Agency makes a write-off for uncollectible receivables.

| <b>Tab. 17 Trade and other receivables</b>                                                  | <b>31.12.2020</b> | <b>31.12.2019</b> |
|---------------------------------------------------------------------------------------------|-------------------|-------------------|
| Trade receivables (gross)                                                                   | 152,569           | 179,720           |
| Receivables impairment allowances                                                           | -25,320           | -23,934           |
| <b>Trade receivables (net), including:</b>                                                  | <b>127,249</b>    | <b>155,786</b>    |
| <i>Due within 12 months</i>                                                                 | <i>127,249</i>    | <i>155,786</i>    |
| Receivables from other taxes, subsidies, customs duties, social security and other benefits | 21,947            | 33,053            |
| Other receivables                                                                           | 488               | 3,807             |
| Receivables from the Social Security Benefit Fund                                           | 832               | 647               |
| <b>Other receivables</b>                                                                    | <b>23,267</b>     | <b>37,507</b>     |
| <b>Trade and other receivables</b>                                                          | <b>150,516</b>    | <b>193,293</b>    |

## Equity and liabilities

The analysis of the asset financing sources shows that the Agency's own funds amounting to kPLN 937,628 represent 47.5% of total liabilities, while the remaining 52.5% are long-term liabilities and short-term liabilities in the total amount of kPLN 1,035,901.

**Tab. 18** *Statement of changes in equity*

| Statement of changes in equity       | Statutory fund | Reserve fund   | Retained earnings | Profit (loss) for the financial year | Accumulated other comprehensive income | Total          |
|--------------------------------------|----------------|----------------|-------------------|--------------------------------------|----------------------------------------|----------------|
| As for 31 December 2019              | 475,022        | 539,615        | 11,171            | 0                                    | -4,379                                 | 1,021,429      |
| Distribution of prior year profit    |                | 11,171         | -11,171           |                                      |                                        | 0              |
| Profit (loss) for the financial year |                |                |                   | -86,166                              |                                        | -86,166        |
| Actuarial profit (loss)              |                |                |                   |                                      | 2,365                                  | 2,365          |
| <b>As for 31 December 2020</b>       | <b>475,022</b> | <b>550,786</b> | <b>0</b>          | <b>-86,166</b>                       | <b>-2,014</b>                          | <b>937,628</b> |

# Statement of cash flows

The net cash flow from PANSA's operating activities for 2020 was negative and amounted to kPLN 195,403.

Cash flow from operating activities refers to cash flows from the core, statutory activities of PANSA, directly related to the services provided. The positive operating cash flow balance demonstrates the ability of the Agency to generate cash from its core operating activities. In 2020, the ability of the Agency to generate cash from its core activities has been significantly affected by the sharp decline in traffic associated with the COVID-19 pandemic. In addition, the liquidity of the Agency was adversely affected by the EUROCONTROL decision of 7 April 2020, which allowed airspace users to defer payment for en-route navigation services performed in February-May 2020 for a period of 8 to 14 months after the invoicing of such services.

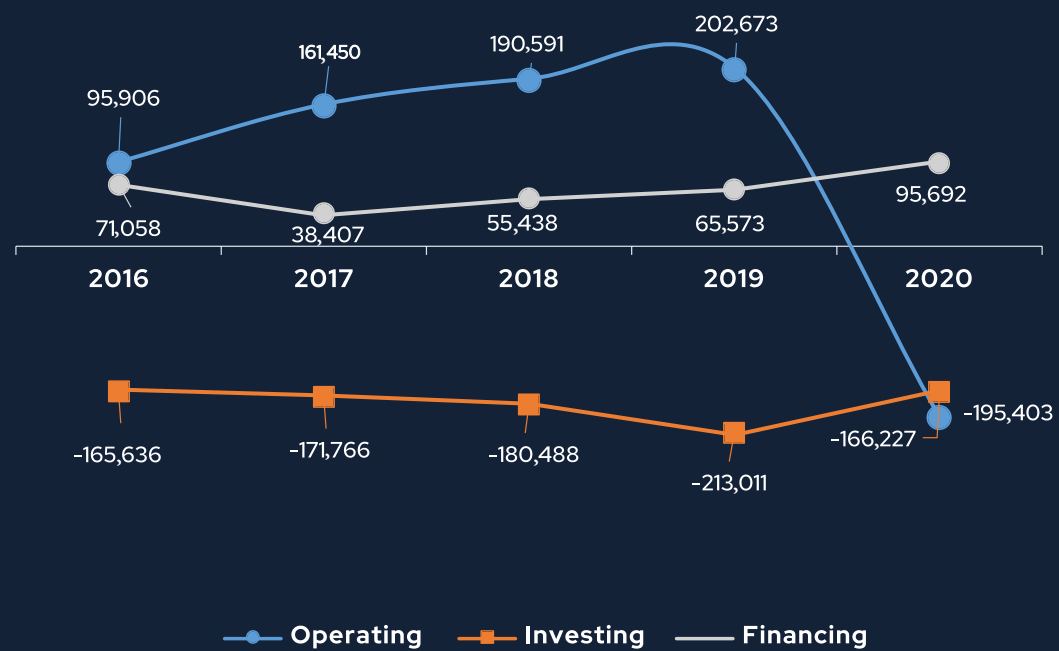
Operating cash flows should provide the Agency with the cash necessary to make investments. Due to the negative operating cash flow, in order to ensure the financing of the investments, the Agency plans to draw down a dedicated loan of PLN 550.0 million in the upcoming years. In connection with the investment processes carried out in 2020, net cash flows for the acquisition of intangible assets and fixed assets amounted to kPLN 166,227. The negative cash flows in this area prove that the PANSA continued its main activities aimed at modernising the Agency through digitisation as well as development in the area of new technologies, which increases the value of fixed assets.

Net cash flow from financing activities in the analyzed period was positive and amounted to kPLN 95,692, which to a large extent resulted from the release of credit in the amount of

PLN 64,5 million in the last days of December 2020 and the impact of grants amounting to PLN 32,8 million.

To cover the negative operating cash flow and be able to pay its liabilities, the Agency used its own funds accumulated in previous years and also partly drew down an overdraft line. Thanks to the measures taken by the Agency, the level of liquidity was maintained and allowed uninterrupted fulfilment of commitments. With a view to ensuring sufficient liquidity in future periods, the Agency has signed an overdraft agreement and made efforts to obtain an additional credit for investment activities.

<sup>[1]</sup> INFORMATION CIRCULAR MODIFICATION OF LATEST DATE FOR PAYMENT (No. 2020/05) – Effective from 7 APRIL 2020

**Fig. 28** *Cash flows*

Tab. 19 Statement of cash flows

|                                                                 | For the year ended 31.12.2020 | For the year ended 31.12.2019 |
|-----------------------------------------------------------------|-------------------------------|-------------------------------|
| <b>Profit (loss) before tax</b>                                 | <b>-101,029</b>               | <b>17,870</b>                 |
| <b>Total adjustments</b>                                        | <b>-94,374</b>                | <b>184,803</b>                |
| Depreciation                                                    | 123,090                       | 111,712                       |
| Foreign exchange profit (loss)                                  | -2,373                        | 1,506                         |
| Interest                                                        | -3,397                        | -2,964                        |
| Profit (loss) on investments                                    | -313                          | -136                          |
| Change in provisions                                            | -7,649                        | 38,703                        |
| Change in inventories                                           | -100                          | 59                            |
| Change in receivables                                           | 42,777                        | 294                           |
| Change in liabilities                                           | 10,240                        | 3,805                         |
| Change in accruals                                              | 28,031                        | -2,142                        |
| Change in adjustments for carry-overs                           | -251,812                      | 83,681                        |
| Income tax (paid)                                               | -3,812                        | -22,166                       |
| Other adjustments                                               | -29,056                       | -27,549                       |
| <b>Net cash flows from operating activities</b>                 | <b>-195,403</b>               | <b>202,673</b>                |
| Disposal of tangible and intangible assets                      | 450                           | 2,501                         |
| Acquisition of tangible and intangible assets                   | -165,629                      | -215,512                      |
| Development work                                                | -1,048                        | 0                             |
| <b>Net cash flows from investments</b>                          | <b>-166,227</b>               | <b>-213,011</b>               |
| <b>Cash flows from financial activities</b>                     |                               |                               |
| Credits and loans                                               | 64,501                        | 0                             |
| Interest received                                               | 5,759                         | 5,187                         |
| Proceeds from grants                                            | 32,846                        | 67,494                        |
| Interest paid                                                   | -2,362                        | -2,223                        |
| Change in liabilities due to IFRS 16                            | -5,052                        | -4,885                        |
| <b>Net cash from financial activities</b>                       | <b>95,692</b>                 | <b>65,573</b>                 |
| <b>Net increases (decreases) in cash and cash equivalents</b>   | <b>-265,938</b>               | <b>55,236</b>                 |
| Change in cash due to exchange rates changes                    | 2,373                         | -1,506                        |
| <b>Balance sheet change in cash and cash equivalents</b>        | <b>-263,565</b>               | <b>53,730</b>                 |
| <b>Opening balance of cash and cash equivalents</b>             | <b>477,712</b>                | <b>423,982</b>                |
| <b>Closing balance of cash and cash equivalents, including:</b> | <b>214,147</b>                | <b>477,712</b>                |
| Restricted cash                                                 | 15,003                        | 7,802                         |

PKF

## Auditor's report

passion

teamwork

quality

clarity



PKF

Accountants &  
business advisers

## Independent Auditor's report

on the annual  
financial statements of Polish Air Navigation Services Agency  
with its registered office in Warsaw  
for the financial year  
from January 1<sup>st</sup>, 2020 to December 31<sup>st</sup>, 2020



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## TRANSLATION



*This document is a free translation of the independent auditors' report issued in Polish in electronic format. Terminology current in Anglo-Saxon countries has been used where practicable for the purposes of this translation to enhance understanding. The backing Polish original should be referred to in matters of interpretation.*

## INDEPENDENT AUDITOR'S REPORT ON THE ANNUAL FINANCIAL STATEMENTS

### For Minister of Infrastructure

#### Report on the audit of the financial statements

##### Qualified opinion on the financial statements

We have audited the accompanying annual financial statements of Polish Air Navigation Services Agency with its registered office in Warsaw at Wiozowa 8 Street, hereinafter referred to as the "Agency", for the financial year from January 1<sup>st</sup>, 2020 to December 31<sup>st</sup>, 2020, which comprise the statement of comprehensive income for the year ended December 31<sup>st</sup>, 2020, the statement of financial position as of December 31<sup>st</sup>, 2020, the statement of changes in equity and the statement of cash flows for the financial year then ended and related notes including significant accounting principles (policies) and other explanatory information.

The financial statements have been prepared in an electronic format as a file entitled Sprawozdanie finansowe PAZP 2020.pdf, and have been signed with an electronic signature by the President of the Agency on May 26<sup>th</sup>, 2021.

The annual financial statements have been prepared in accordance with applicable financial reporting framework of International Accounting Standards, International Financial Reporting Standards and related interpretations published as a Commission Regulation, hereinafter referred to as "IFRS EU".

In our opinion, except for effects of the matter described in the Basis for Qualified Opinion section of our report, the accompanying annual financial statements of Polish Air Navigation Services Agency:

- give true and fair view of the financial position of the Agency as of December 31<sup>st</sup>, 2020, and of its financial performance and its cash flows for the financial year then ended in accordance with IFRS EU and applied accounting principles (policies);
- comply, in all material respects, as to the form and content, the Accounting Act dated September 29<sup>th</sup>, 1994 (Dz.U. [Journal of Laws] of 2019, item 351 as amended), hereinafter referred to as the "Accounting Act", IFRS EU as well as with provisions of the Agency's articles of association that affect its content;
- have been prepared, in all material respects, based on the properly kept accounting records in accordance with the provisions of Chapter 2 of the Accounting Act.

##### Basis for Qualified Opinion

Due to the great decline in air traffic in Europe as a result of the COVID-19 pandemic, the Commission Implementing Regulation (EU) no 2020/1627 dated November 3<sup>rd</sup>, 2020 regarding exemptions for the calculation and setting of unit rates and related adjustments, the rate setting and settlement mechanism for en-route and terminal services has been modified for year 2020. It included the introduction of a mechanism for settling lost revenues from year 2020 in future periods, with the assumption that years 2020 and 2021 are being defined as one reporting period for these purposes.

As presented in note no 9 „Sales revenues” the Agency estimated the value of lost revenues for year 2020, which will be able to settle in the en-route and terminal unit rates of future periods in total amount of PLN 237 258 thousand. The mechanisms estimated in this way increased, respectively, revenues from the sale of en-route and terminal services in year 2020 and are subject to settlement with airspace users during a minimum period of 5 years, starting from year 2023.

For estimation the value of lost en-route and terminal revenues, the Agency applied the prudence principle of valuation. Additional expert assumptions were used to reduce the value of lost revenues.

We have not been presented with a justification for these expert assumptions which was reducing the estimated lost revenues in year 2020. For this reason, we were unable to obtain sufficient and appropriate audit evidence regarding the treatment of this matter in the 2020 financial statements. As a result, we were unable to conclude that the years' 2020 financial statements are free from material misstatement in relation to this matter.

We conducted our audit of the financial statements in accordance with the National Standards on Auditing being International Standards on Auditing as adopted in Poland by the National Chamber of Statutory Auditors, hereinafter referred to as "National Standards on Auditing", applicable to audit of financial statements prepared for the periods ended on December 31<sup>st</sup>, 2020.

## TRANSLATION



Our responsibilities under those standards are further described in the "Statutory Auditor's Responsibilities for the Audit of the Financial Statements" section of our report.

We are independent of the Agency in accordance the International Code of Ethics of Professional Accountants including the International Independence Standards, hereinafter referred to as the "IFAC Code", adopted by a resolution of the National Chamber of Statutory Auditors and the requirements of independence specified in the Act on Statutory Auditors.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

##### Responsibilities of the President of the Agency for the financial statements

The President of the Agency is responsible for the preparation of the annual financial statements that give true and fair view in accordance with IFRS EU, their compliance with applicable laws and regulations and the Agency's articles of association, as well as for keeping the accounting records in accordance with the Accounting Act.

The President of the Agency is also responsible for such internal control as management deems necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing financial statements, the President of the Agency is responsible for assessing the Agency's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management wither intends to liquidate the Agency or to cease operations, or has no realistic alternative but to do so.

Under the Accounting Act, the President of the Agency is obliged to ensure that the annual financial statements meet the requirements of the Accounting Act.

##### Statutory Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance as to whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an independent auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the above mentioned standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

While carrying out the audit, in compliance with the National Standards on Auditing:

- we exercise professional judgment and maintain professional skepticism and
- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient

and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud or other irregularities is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control and may relate to any area of law and regulations, not only the one that directly impacts the financial statements.

- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Agency's internal control;

- evaluate the appropriateness of accounting principles (policies) used and the reasonableness of accounting estimates and related disclosures made by the Agency's President;

- conclude on the appropriateness of use by the Agency's President of the Agency of the going concern basis while applying the adopted accounting principles (policies) and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Agency's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our audit report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion about the financial statements. Our conclusions are based on the audit evidence obtained up to the date of our audit report. However, future events or conditions may cause the Agency to cease to continue as a going concern.

- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events accurately.

Our audit does not involve any assurance on the future viability of the Agency nor the efficiency nor effectiveness with which the President of the Agency has conducted or will conduct the affairs of the Agency.

Under the Act on Statutory Auditors, we are also required to express in the audit report an opinion on whether financial statements comply, as to their form and content, with applicable laws as well as the Agency's articles of association and whether they have been prepared based on the properly kept accounting records. We report on these matters based on the work undertaken in the course of the audit.



## TRANSLATION



### Report on Other Legal and Regulatory Requirements

#### Other information included in the annual report

Other information comprises the financial and non-financial information, other than the financial statements or our report. Other information comprises of the management report for the year ended on December 31<sup>st</sup>, 2020.

The management report has been prepared in electronic format as a file titled Sprawozdanie z działalności PAZP 2020.pdf and has been signed with qualified electronic signatures by the President of Polish Air Navigation Services Agency on May 28<sup>th</sup>, 2021.

Our opinion on financial statements does not cover the other information and, except to the extent otherwise explicitly stated in Report on Other Legal and Regulatory Requirements below, we do not express any form of assurance conclusion thereon. Furthermore, scope of our work related to the other information conducted in the course of our audit and related assurance conclusion is only as we describe below.

#### Responsibilities of President of the Agency

The President of the Agency is responsible for preparation of the management report in compliance with the law. The President of the Agency is required to ensure that the management report complies with the Accounting Act.

#### Responsibilities of the Statutory Auditor

Under the Act on Statutory Auditors and the Regulation on Current and Periodic Information, we are required to express an opinion

on whether the management report has been prepared in accordance with the Accounting Act and whether it is consistent with the information included in the annual financial statements.

Furthermore, we are also required to state, whether, in the light of the knowledge of the Agency and its environment obtained during the course of the audit, we have not identified material misstatements in the management report, and report on these misstatements if noted.

We have read the management report. We considered whether it discloses the information required by these laws and whether the information included therein is consistent with the information included in the financial statements. Reading the management report we also considered whether, in the light of our knowledge and understanding of the Agency and its environment, it does not include material misstatements.

#### Opinion on the management report

In our opinion, based on the work undertaken in the course of the audit of the annual financial statements, the accompanying management report of Polish Air Navigation Services Agency for the financial year ended on December 31<sup>st</sup>, 2020:

- has been prepared in accordance with Article 49 of the Accounting Act,
- the information presented therein is consistent with the information in the audited financial statements.

In the light of the knowledge of the Agency and its environment obtained during the course of the audit, with the exception of matters described in the "Basis for Qualified Opinion" we have not identified material misstatements in the management report.

Qualified electronic signature on the Polish original

Cezary Bakiewicz  
Statutory auditor no.12 232

Key Statutory Auditor conducting the audit  
on behalf of PKF Consult Spółka z ograniczoną odpowiedzialnością Sp. k.  
the audit firm number 477

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Warsaw, May 28<sup>th</sup> 2021





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