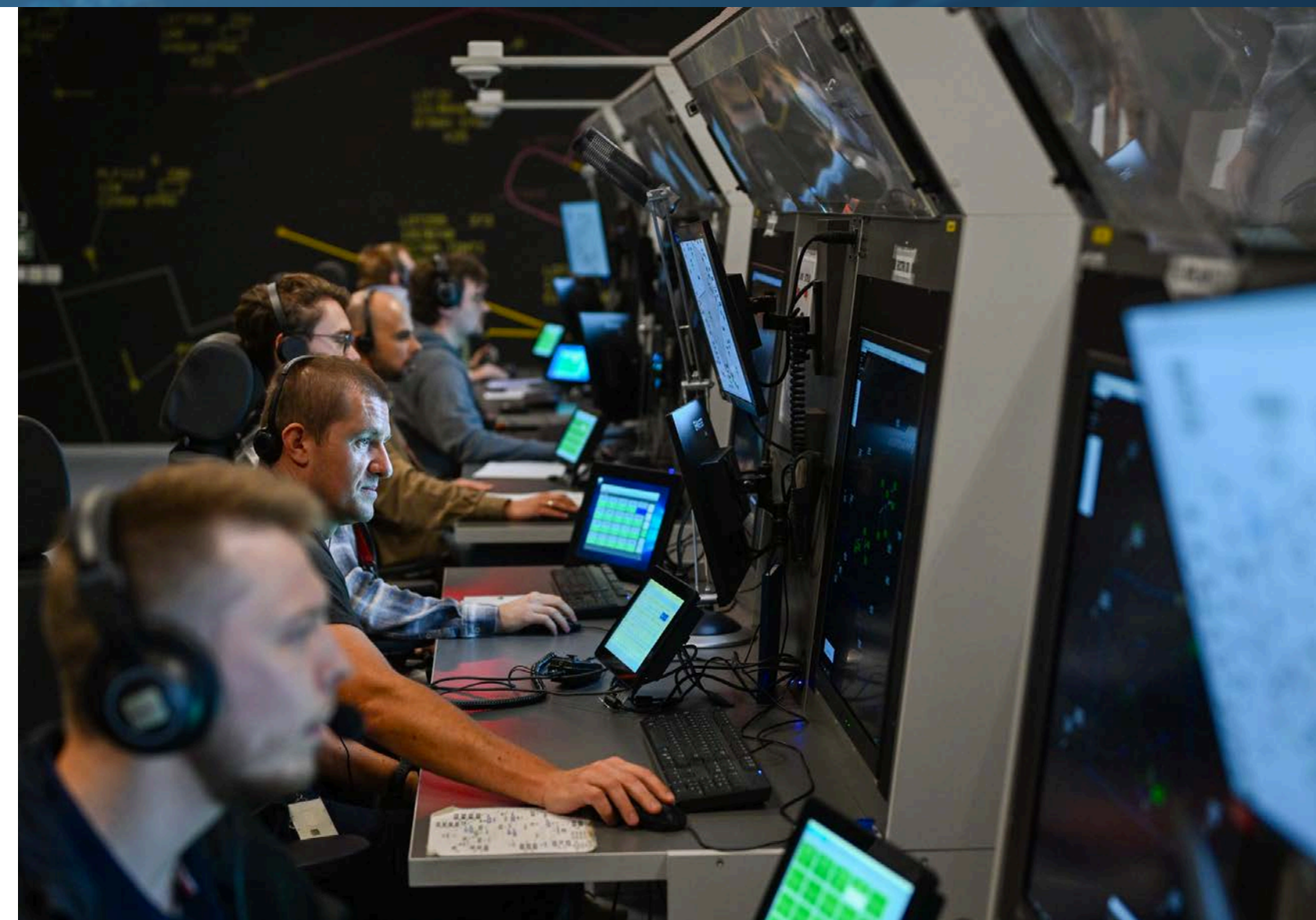

PANSA

ANNUAL REPORT 2024



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Foreword	3
Key Results	4
Key Events 2024	5
Organization	7
Operational Activity and other services	10
Performance	24
Ensuring Safety	32
PANSA ATS Training Centre	34
Investments	35
Pro-environmental Activities by PANSA	36
Human Resources	38
PANSA's Domestic and International Presence	40
Priorities for 2025	45
Financial Results	46





Dear Readers,

In 2024, the Polish Air Navigation Services Agency continued to deliver its key service – air traffic control – at the highest level. As a result, thousands of airline passengers flying through Polish airspace could feel safe, knowing that their flights were overseen by top-class specialists.

In 2024, the number of IFR operations handled in Polish airspace increased by 8.8% compared to 2023. The growth dynamics differed between terminal and en-route traffic. The dynamics of en-route traffic recovery remained notably constrained by the war in Ukraine, ongoing since 2022. These circumstances required the Agency to ensure the safe handling of civil air traffic amid intensified military operations. Since the outbreak of the war, Rzeszów-Jasionka Airport has served as a logistical hub for Ukraine, through which a substantial share of aid for this country is delivered.

PANSA's readiness for full air traffic recovery following the cessation of hostilities remains a matter of key importance. To ensure this, we have successfully developed the assumptions defining the Agency's framework of activity for the coming years (PP RP4 2025-2029), covering the most important performance criteria: safety, provision of adequate airspace capacity, cost efficiency, and environmental responsibility. These assumptions have been formally approved by the European Commission.

The Polish Air Navigation Services Agency plays a fundamental role in shaping the future of the European aviation sector. Through active and substantive participation in the most important international aviation organisations such as ICAO, EASA, CANSO, and EUROCONTROL, as well as through cooperation with the European Commission, the Network Manager, the SESAR Deployment Manager, the SESAR Joint Undertaking, and membership in strategic ATM alliances (iTEC, A6 Alliance), we implement key processes for modernising the air navigation services market.

Air traffic management in Europe is undergoing a technological transformation towards a digital sky. The objectives defined by SESAR – the technological pillar of the Single European Sky (SES) – are highly ambitious, and PANSA places particular emphasis on technological development and the preservation of innovative capacity. Digitalisation and artificial intelligence are playing an increasingly prominent role in our sector, creating both challenges and opportunities. Our goal is to harness these developments to further enhance operational efficiency.

The year 2024 was exceptional in terms of challenges and activities undertaken by the Polish Air Navigation Services Agency. We defined the future of our organisation in a long-term perspective extending to 2034, reflected in 10 strategic objectives. These objectives form the foundation for building an organisational culture grounded in cooperation, trust, and open communication – one in which the work of every employee is valued, purposeful and contributes to the realisation of a shared vision.

I am pleased to invite you to read the report.

Magdalena Jaworska-Maćkowiak
PANSA CEO

Selected Performance Indicators	2020	2021	2022	2023	2024
Number of en-route flights ('000)	377	473	627	697	758
Number of controlled IFR flight hours ('000)	221	272	361	391	421
Number of terminal operations ('000)	194	238	382	433	477
Average en-route ATFM delay (min/flight)	0.00	0.07	1.09	0.20	0.23
Employment at year end	1,912	1,879	1,839	1,939	2,069
Employment – ATCOs at year end (persons)	597	591	590	593	596
Total sales revenues in PLN ('000) ^[1]	771,342	1,196,051	1,140,616	1,219,990	1,230,069
Revenue from en-route navigation services in PLN ('000) ^[2]	625,258	963,586	878,529	950,274	953,425
Revenue from terminal navigation services in PLN ('000) ^[3]	122,385	208,773	209,278	227,494	232,052
Profit / loss on sales in PLN ('000)	-114,272	572,701	147,538	29,661	- 101,540
Net profit / loss in PLN ('000)	-86,166	405,028	76,616	21,406	-126,619

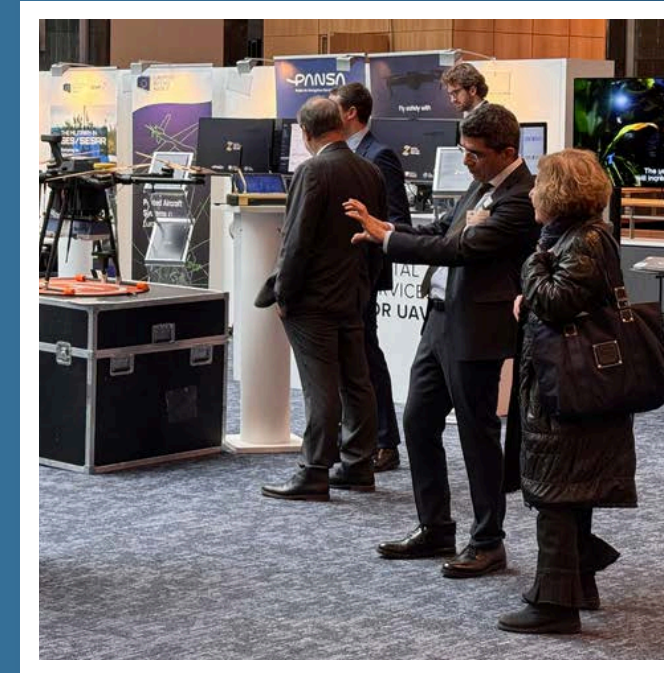
[1-3] Revenue from sales includes adjustments listed in Article 25.2 of Regulation 2019/317 that are recognized in the given year, including – for the years 2020-2021- adjustment for difference in revenue during the COVID-19 pandemic, which are settled through air navigation charges unit rates in the following years



January

Magdalena Jaworska-Maćkowiak appointed to the position of PANSA CEO

Prime Minister Donald Tusk, at the request of Infrastructure Minister Dariusz Klimczak, appointed Magdalena Jaworska-Maćkowiak as PANSA CEO on January 4, 2024.



February

Polish drone solutions presented at the European Parliament

For three days (until 22 February), specialists from the Polish Air Navigation Services Agency (PANSA) participated in an expert showcase at the European Parliament. The event, organized by CANSO – an international organization of air navigation service providers – aimed to present to MEPs and visitors to the EP the latest solutions for unmanned aerial vehicles and regulatory issues related to integrating drones into shared airspace.



March

A6 Alliance Steering Board in Geneva chaired by PANSA

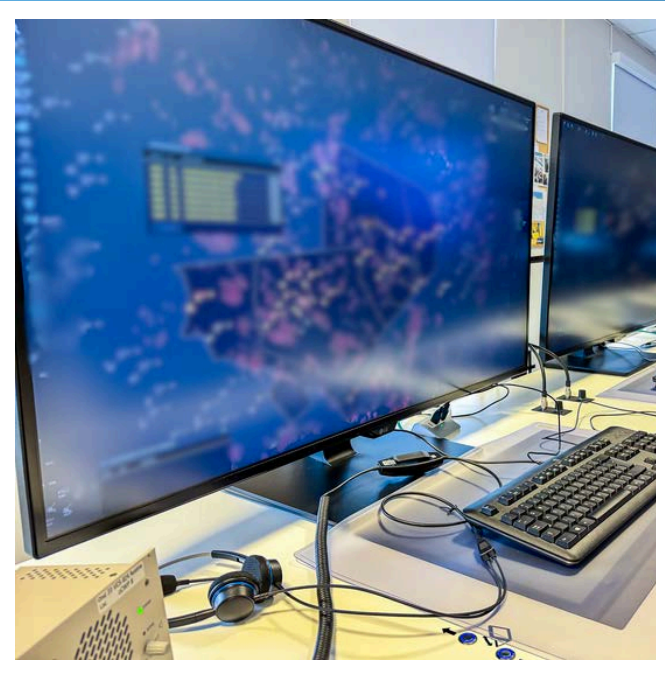
Preparations for the 2024 summer season, update of the ATM Master Plan, preliminary assumptions for the SESAR strategy beyond 2027, and relations with EUROCONTROL Network Manager were the main topics of the A6 Alliance Steering Board meeting chaired by the Polish Air Navigation Services Agency during the Airspace World 2024 ATM industry exhibition in Geneva.



April

PANSA launches new DroneTower application

On 15 April 2024, the Polish Air Navigation Services Agency launched a new mobile app, DroneTower, which is now the official ICT system for submitting the intention to fly a drone (Check-In). The new free DroneTower app, developed and owned exclusively by the Polish Air Navigation Services Agency, is available for download from Google Play and the App Store.



July

Polish air traffic controllers and PANSA experts co-design a new airspace management system for Europe

A new, more efficient air traffic management system in Europe will be developed based on the professional expertise of Polish engineers and air traffic controllers employed by PANSA. The next stage of international cooperation begun in building the iTEC SkyNEX system – a modern air traffic control tool that will enhance flight safety and fluidity while improving economic and environmental efficiency for air carriers.



September

Construction of iTEC SkyNex, the next-generation air traffic control system, begins with PANSA's participation

Members of the iTEC Alliance, including experts from the Polish Air Navigation Services Agency, are strengthening their commitment as the construction phase of iTEC SkyNex begins under the iTEC Collaboration framework. The aim of the iTEC SkyNex system is to increase efficiency and interoperability, provide more accurate data, optimize flight routes and resources, and reduce delays and CO₂ emissions, which will significantly lower costs.



December

A6 Steering Board summarized 2024

On 5 December, the A6 Alliance Steering Board held its final meeting of the year in Brussels, chaired by Magdalena Jaworska-Maćkowiak, PANSA CEO. Key European representatives of air navigation service providers summed up 2024 and defined priorities for the future of air traffic management in Europe.



Organisational structure of the Polish Air Navigation Services Agency as at the end of 2024



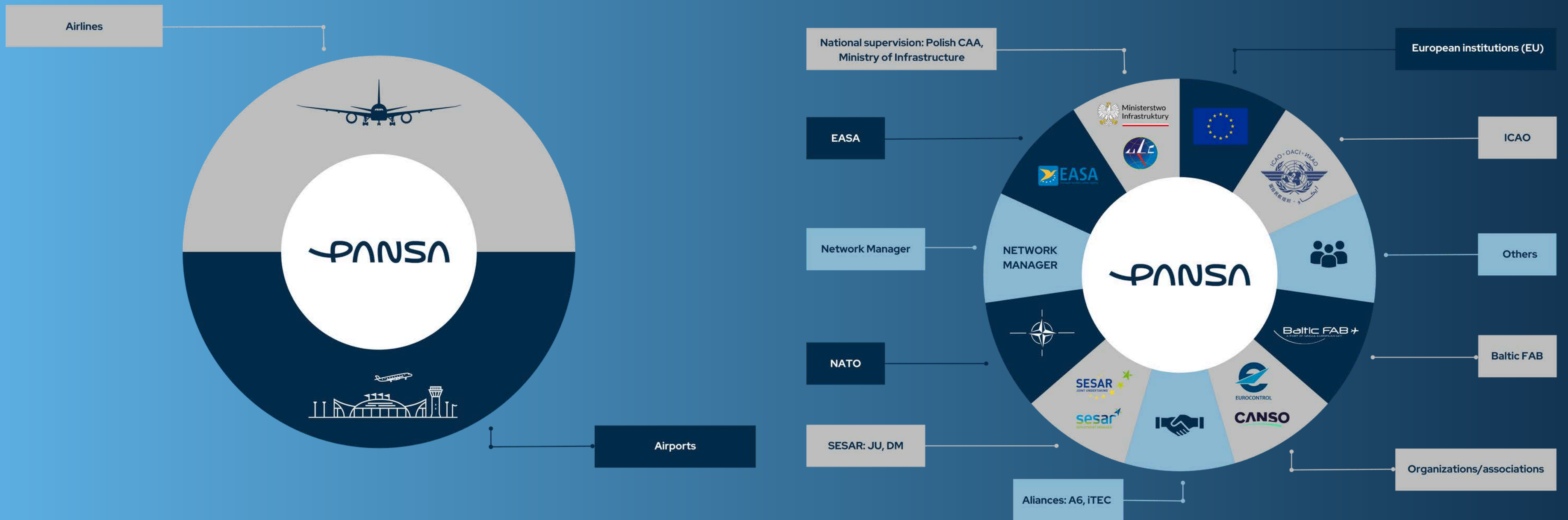


Mission

- We provide safe and efficient air navigation services for all users of Polish airspace.
- We invest in people and innovation for sustainable air transport.
- We contribute to economic growth in Poland.

Vision

- We are a dynamic and efficient ANSP that is fit-for-purpose in Poland and within the European Sky.
- We embrace innovation and people as the determinants of our future.
- Leveraging our unique position in Europe, we develop and maintain critical national airspace infrastructure to ensure safe, sustainable, and efficient air travel.
- We provide airspace solutions that cater to both civil and military needs and promote a secure and well-coordinated environment.
- We are committed to further enhancing a strong Safety Culture, and we prioritize our vigilance on cybersecurity.
- Respect, trust, and collaboration are at the core of our interactions with clients and colleagues.





Operational Activity and other services

The Polish Air Navigation Services Agency is a state legal entity responsible for airspace management (ASM) , air traffic flow management (ATFM) and the provision of air navigation services (ATM/ANS), within the following scope:

- air traffic services (ATS) (including air traffic control services (ATC, i.e. ACC, APP, TWR) and flight information services (FIS)),
- communications services (COM),
- navigation services (NAV),
- surveillance services (SUR),
- aeronautical information services (AIS).



Furthermore, PANSA:

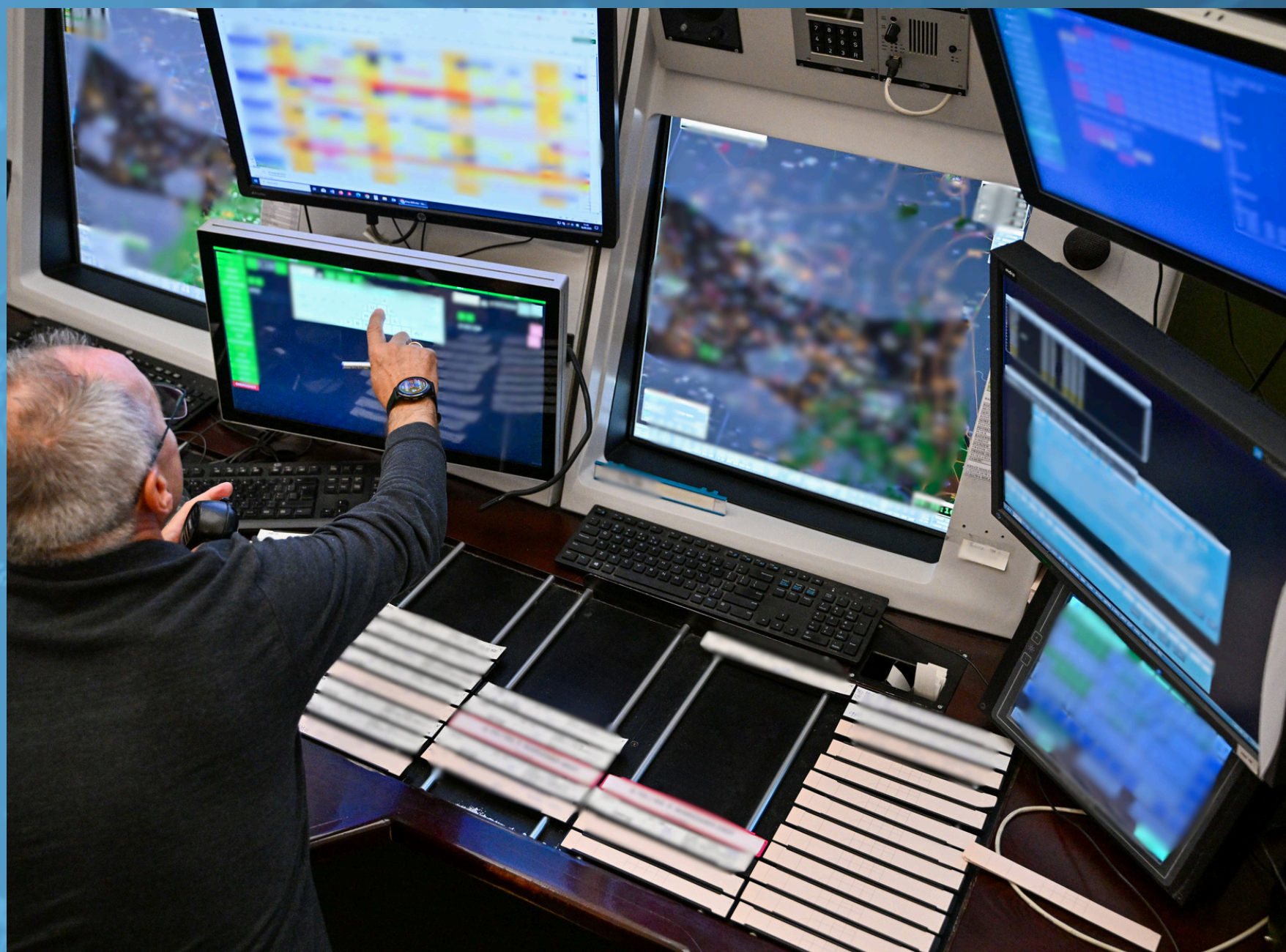
- provides airspace users with meteorological information produced by institutions certified in meteorological services;
- provides in-flight control of aerial communication, navigation and airspace surveillance equipment and systems;
- provides training and consultation on ANS;
- conducts research and development activities in the field of ANS;
- purchases, maintains and upgrades ATM/CNS infrastructure;
- ensures coordination of search and rescue operations;
- acts as the flight schedule coordinator for Kraków-Balice airport and, under consent of the Minister responsible for transport, conducts other activities not related to the tasks described above.



Air traffic control is exercised at three levels:

- **area control** – established for the purpose of air traffic control with respect to controlled flights. It is performed by Area Control Centre (ACC) Warsaw using surveillance equipment;
- **approach control** – established for the purpose of air traffic control with respect to arrivals and departures of controlled flights. In Poland, four radar approach control units have been established (APP Warsaw, APP Gdańsk, APP Kraków, APP Poznań) to provide services using surveillance equipment;
- **aerodrome control** – 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 provide procedural approach control.





FIS officers of the Polish Air Navigation Services Agency handled nearly **300,000 operations in 2024**, up by more than 15,000 compared to the year before. FIS is one of the services provided by the Polish Air Navigation Services Agency to assist pilots of small aeroplanes in uncontrolled airspace.

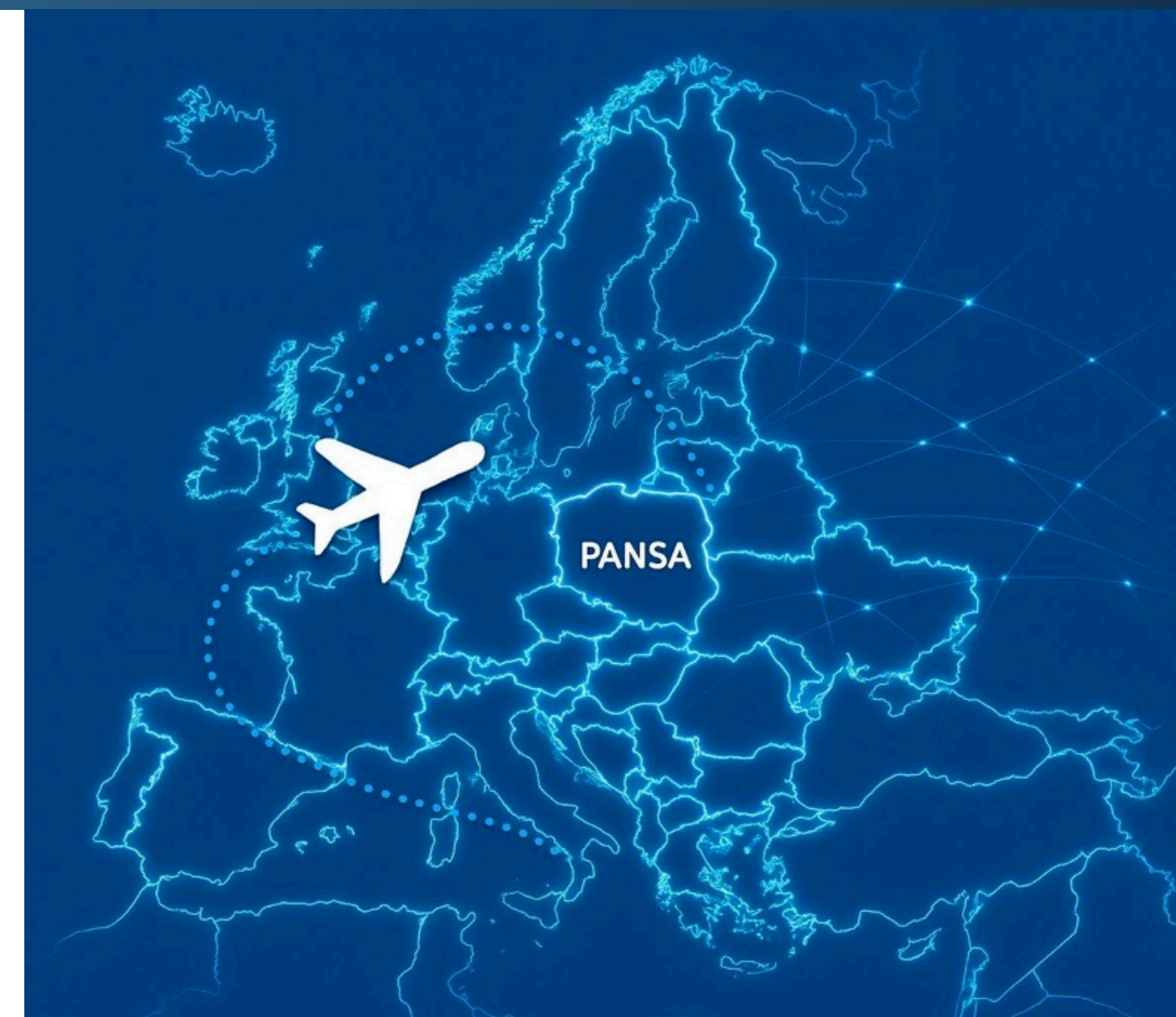
FIS ensures safety wherever air traffic control is not available, i.e. across Class G uncontrolled airspace, according to ICAO criteria. With few exceptions, that airspace stretches across the country from the ground level up to FL95, i.e. slightly less than 3 kilometres.



Every day, the **Polish Air Navigation Services Agency** ensures safety of passengers in nearly **3,000 flights** over Poland. The airspace under our surveillance and control is greater than **334,000 km²**, which makes it one of the largest in Europe. There are **nearly half a million passengers** on board of aircraft flying over Poland every day. The Polish Air Navigation Services Agency is Poland's only institution that trains and employs civilian air traffic controllers.



With a view to ensuring the required airspace capacity, the Agency continued work to further develop the functionality of the **P_21 system** in order to maintain optimal operational and technical parameters until a new ATM system is implemented, including through development of the primary P_21 system, and took actions aimed at target implementation of **iTEC/SkyNex (iSNEX)** in cooperation with leading European ANSPs.



In 2024, work was continued under the project to put in place **cross-border FRA**, involving cross-border FRA operations with Czechia and Sweden. New procedures and technologies were implemented under Advanced FUA (AFUA), which aims to streamline comprehensive airspace management. Work was continued on the **three-layer division of ACC Warsaw sectors**, introduced by stages, in accordance with the operational needs, coupled with further implementation of PBN-compliant flight procedures. The working technology and procedures of air traffic control services were maintained to enable aircraft crews to apply **Continued Descent Operations (CDO)/Continued Climb Operations (CCO)** landing/take-off techniques.



Operational Activity and other services | Airspace management

Furthermore, PANSA developed and used its proprietary software, i.e. the CAT airspace management system, fully supporting AFUA and the CDM process with military users, including: the development of the ASM-SWIM service, the expansion of web tools (WebRQA) and the development of Dynamic RAD (the dynamic restriction management functionality, adaptation of the system interfaces to the SWIM requirements, construction of network services on the basis of the Service Oriented Architecture (SOA)).



The proprietary CAT system for advanced airspace management involves:

- Support for comprehensive airspace management
 - reservation of airspace structures
 - daily preparation of the airspace use plan (AUP)
 - use and monitoring of airspace structures in real time
- More than 70 system terminal locations – exchange of information in real time (24 at PANSA; 50 at the Polish Armed Forces)
- A modern web solution – access to the current status of airspace use (<https://airspace.pansa.pl/>)

The CAT system allows efficient management of structures in accordance with the concept of Advanced Flexible Use of Airspace (AFUA) at pre-tactical level and in real time, including their activation, deactivation and change of altitude parameters. The CAT system works closely with the European air traffic management system coordinated by Network Manager, and, through a B2B Web Services connection, automatically exchanges all information on the activity of the structures included in the AUP.



In 2024, PANSA continued its activity within the **iTEC (Interoperability Through European Collaboration)** under partnership agreements on joint development of the ATM system concluded between DFS, NATS, ENAIRE, LVNL, Avinor and Oro Navigacija. Acting as the technological partner in the iTEC is Spain's company INDRA Sistemas. In March 2024, the iTEC was joined by Canada's ANSP – NavCanada.

As part of collaboration within the **iTEC**, air navigation services agencies collaborate with the technological partner to achieve smoother and more efficient air traffic management through harmonisation and development of the advanced state-of-the-art iTEC/SkyNex ATM system, which is in line with and supports the Single European Sky.

iTEC SKyNex is:

- ATM system that uses Trajectory-Based Operations to enable better flight route and time management and ensure lower fuel consumption and CO2 emission reduction,
- Concept of operations compliant with SESAR, including 4D trajectory management supporting enhanced operational effectiveness,
- System architecture that supports interoperability through, among others, implementation of Flight Object and SWIM,
- ATM system with interchangeable ATS components that supports universal standards and Open Digital Architecture,
- Increase in airspace capacity by minimising routine tasks while increasing safety and productivity,
- Interoperability between ATM systems using SESAR data interfaces.





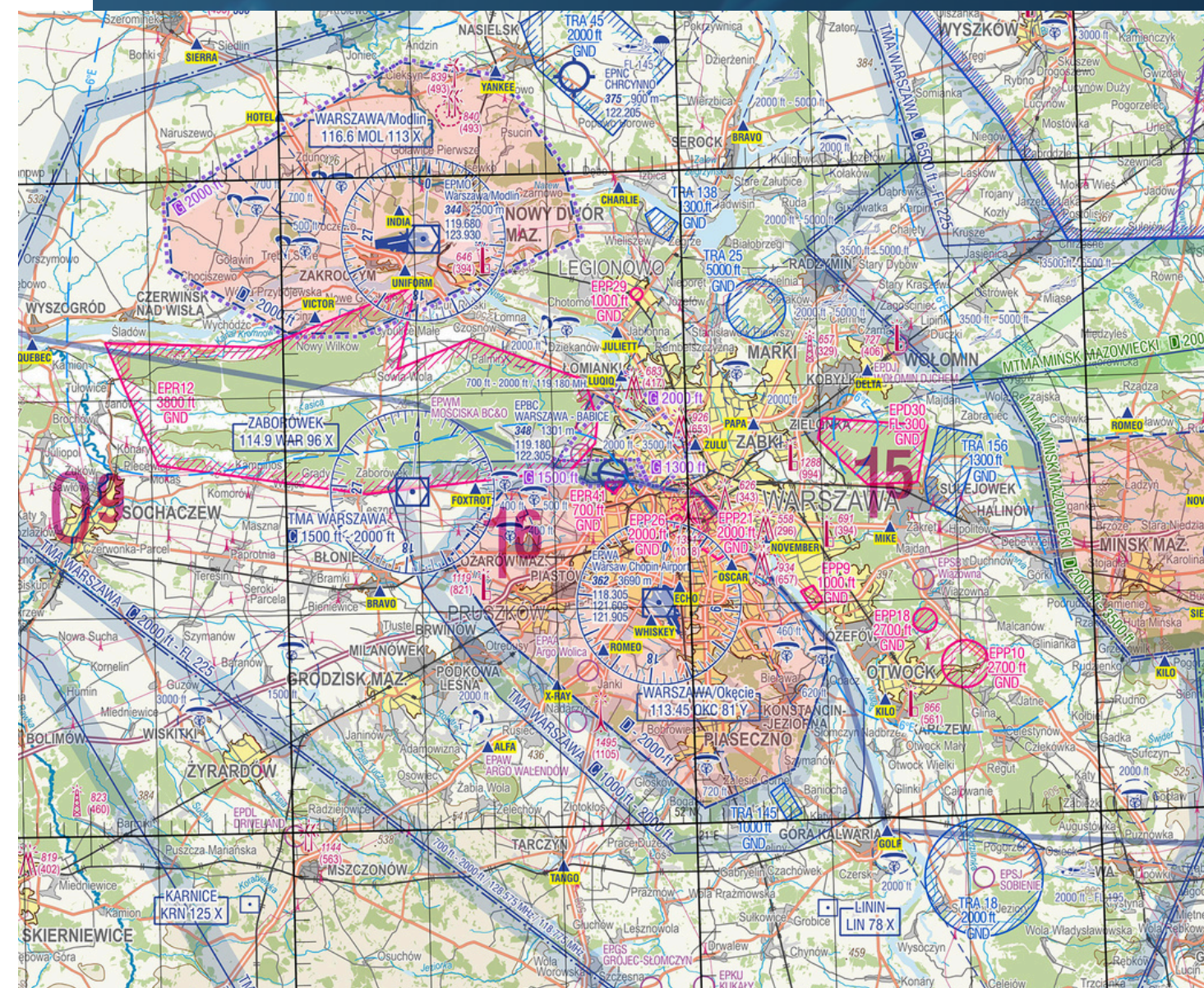
PANSA bodies include the **Aeronautical Information Service (AIS)**. AIS Poland is responsible for providing aeronautical data and information necessary to ensure the safety, regularity and efficiency of air navigation in FIR Warsaw. AIS Poland prepares aeronautical information products which include:

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

At present, the AIS is undergoing transformation into Aeronautical Information Management (AIM) and new digital Aeronautical Information Management systems are being implemented, with a priority given to data integrity, consistency and compliance with industry standards.

Digitalisation of the Aeronautical Information Service (AIS) involves also implementation of the requirements of the European Commission Regulation (Common Project One / CP1) in the area of SWIM (System Wide Information Management):

- Standardisation of the data exchange model (implementation of the international aeronautical data exchange model with airspace users and other stakeholders);
- Automation of reporting, processing and distribution of aeronautical information products;
- Support for air traffic management systems by means of digital services (the launch of the digital NOTAM project and creation of an aerodrome cartographic database);
- Development of a system to facilitate flight planning for General Aviation – the IWB system.





In accordance with the provisions of the Aviation Law and the Regulation of the Minister of Infrastructure and Development on the aeronautical search and rescue service, the **Civil-Military Aeronautical Rescue Coordination Centre (ARCC)** at PANSa executed tasks aimed at providing aeronautical search and rescue (ASAR) through coordination of search and rescue operations in FIR Warsaw. The ARCC plays the role of a Search & Rescue Point of Contact (SPOC) as an element of the Cospas-Sarsat international satellite system which ensures global detection and location of distress signals from transmitters installed on ships (EPIRB), aircraft (ELT), and from personal transmitters (PLB).

Actions taken in this respect 2024 included, among others:

- execution of tasks relating to ensuring organisation and coordination of search and rescue operations in FIR Warsaw;
- preparation for participation in the SAREX aeronautical search and rescue exercise;
- participation in the work of the Cospas-Sarsat committee;
- development and training of the ARCC operations personnel;
- provision of ASAR training;
- participation in communication and exchange of information during search and rescue operations;
- coordination of actions of the Civil-Military Rescue Coordination Centre (ARCC) as regards cooperation of the ASAR service with air traffic services, aviation organisations and the President of the Civil Aviation Authority, the Minister of National Defence, the Maritime Search and Rescue Service, State Medical rescue Service teams, the Polish Medical Air Rescue, entities in charge of mountain and water rescue, military units, the Police, the State Fire Service, the Border Guard, foreign rescue coordination centres (RCC) and other entities in charge of rescue services.





Operational Activity and other services | Flight schedule coordination

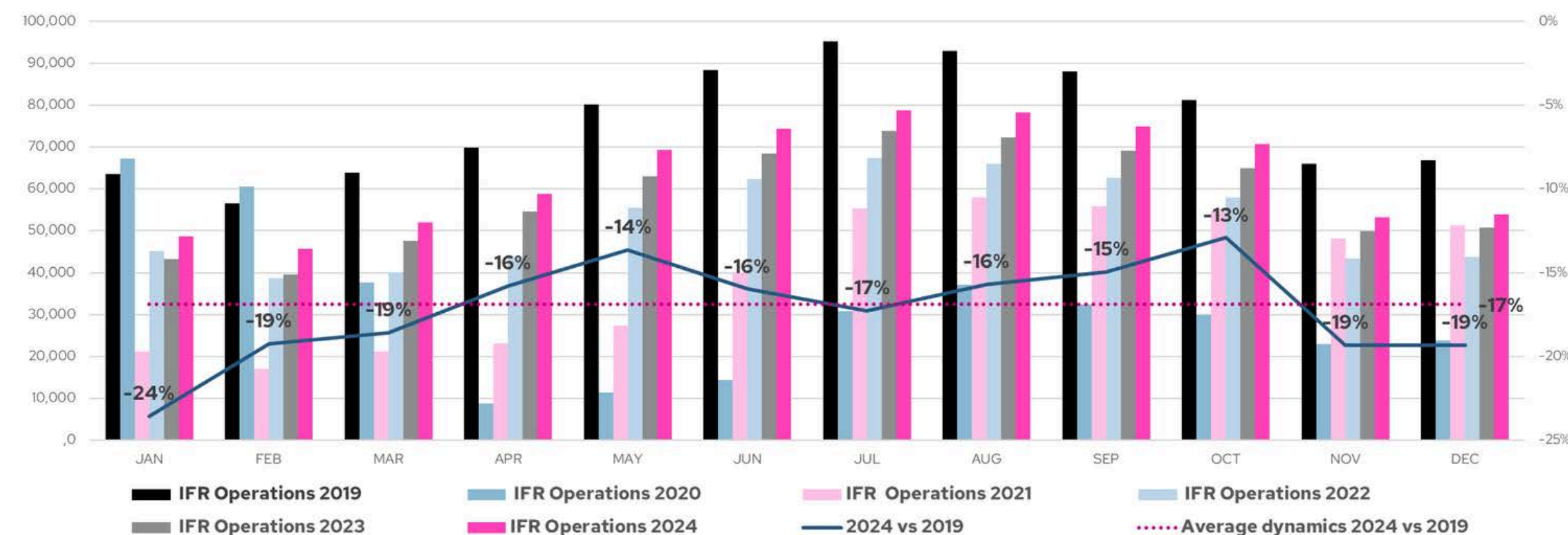


In 2024, the Polish Air Navigation Services Agency acted as the flight schedule coordinator for **Kraków-Balice airport**. Coordination is performed under EU and Polish legislation and in accordance with International Air Transport Association (IATA) guidelines contained in the Worldwide Slot Guidelines (WSG) and the Standard Schedules Information Manual (SSIM). Flight schedule coordination is based on independence, neutrality, non-discrimination and transparency of the coordinator vis-à-vis all air carriers.

The geopolitical situation, in particular the war in Ukraine, is the main determinant for the pace of traffic recovery in the Polish airspace. Military operations and sanctions imposed, resulting in major changes in traffic flows within the European airspace, have led to a significant decline in overflights in FIR EPWW. In 2024, **overflights stood at 62% of the 2019 level**. Weather conditions also had a significant impact on the number of operations. The volume of en-route traffic in 2024 in terms of the total number of movements (MVS) was **9% higher compared to the 2023 volume**. As regards terminal traffic, **8% more operations** were handled compared to the previous year.

The recovery of the arrival traffic at Polish airports was much more dynamic than in the case of transit overflights. The IFR arrival traffic in 2024 stood at **7% of that in 2019, and was 10% greater compared to 2023**. Most Polish airports exceeded the 2019 level in terms of air operations handled.

Fig. 1 Air traffic dynamics in FIR Warsaw (IFR operations), 2024 vs 2019



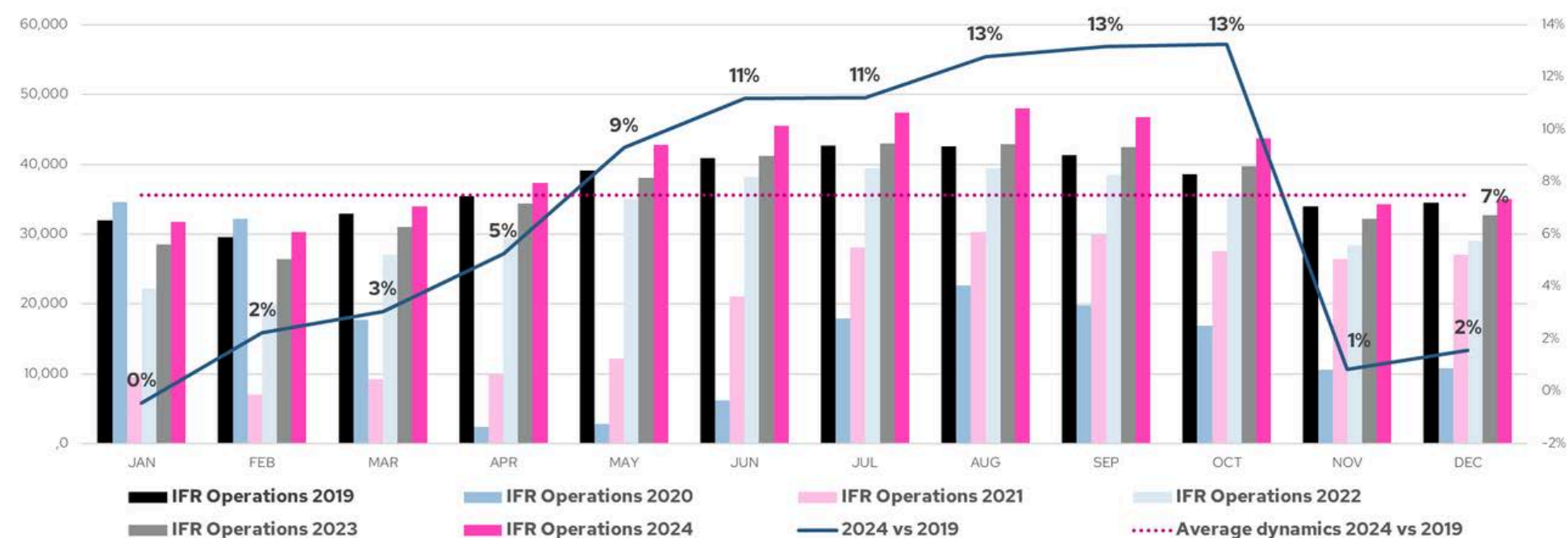
Source: Own elaboration based on EUROCONTROL

IFR operations handled by PANSA in 2024:

- en-route traffic – 758,000 MVS;
- terminal traffic – 477,000 MVS.

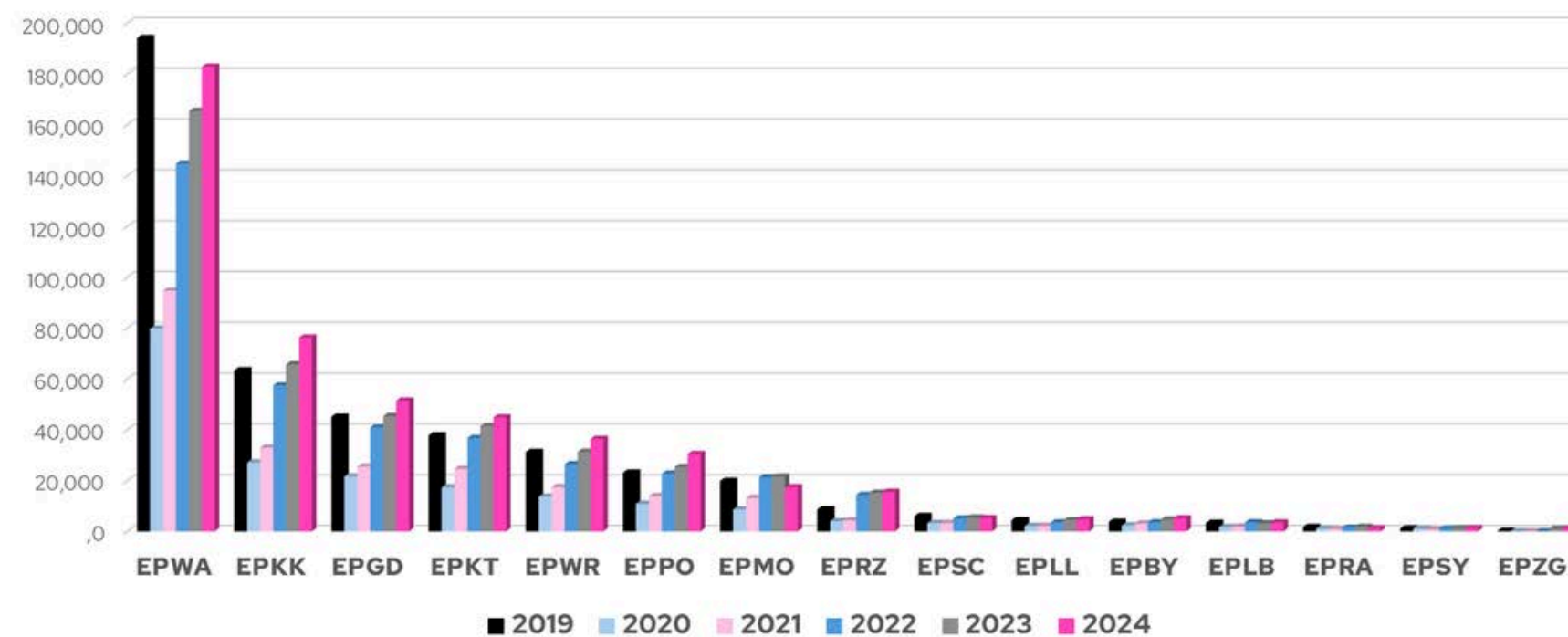


Fig. 2 Terminal traffic dynamics in FIR Warsaw (IFR operations), 2024 vs 2019



Source: Own elaboration based on EUROCONTROL

Fig. 3. Total terminal traffic volumes at individual airports (IFR operations) in 2019-2024



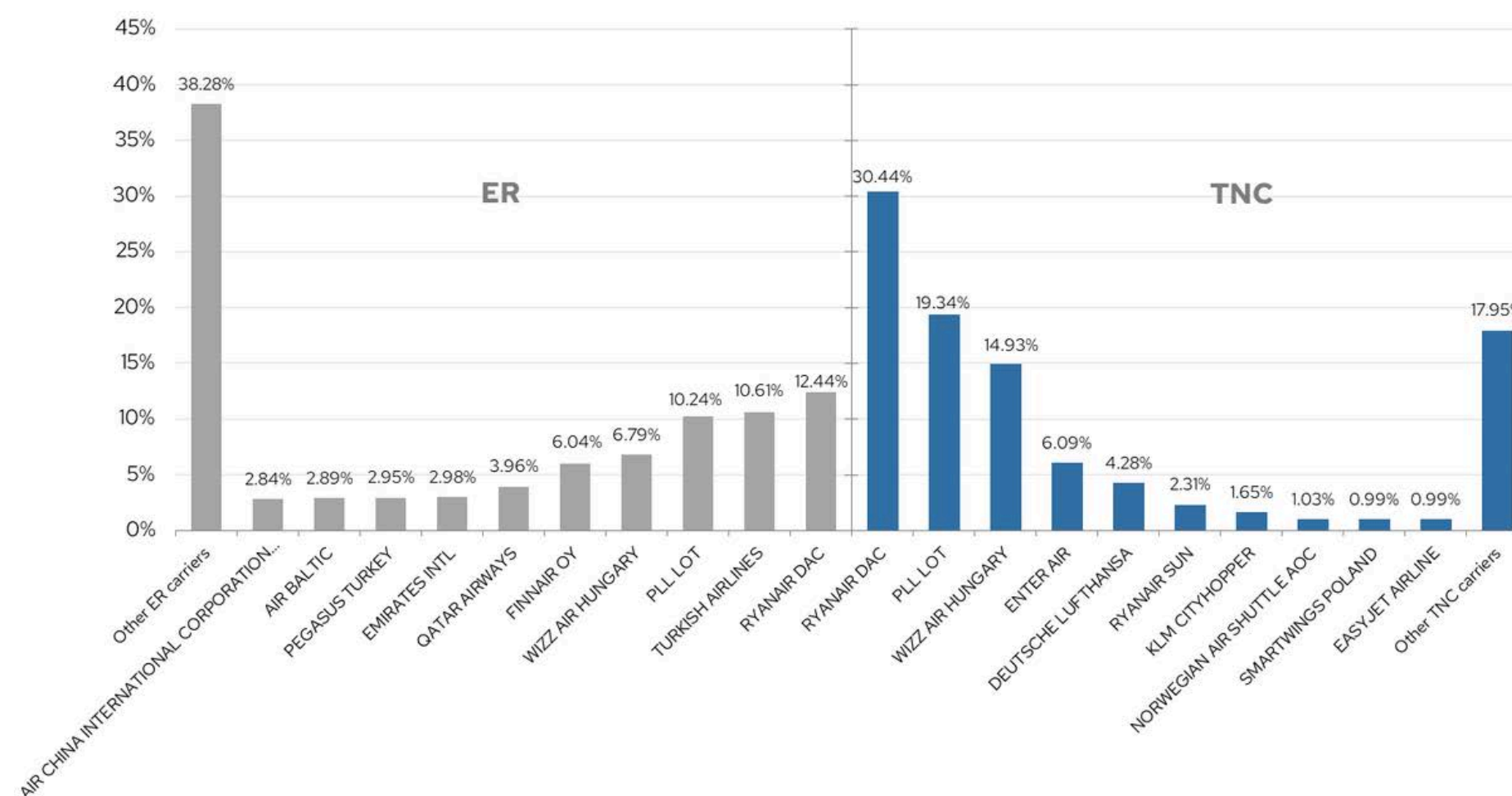
Source: Own elaboration based on EUROCONTROL

Polish airports were most frequently used by low-cost carriers (LCCs), followed by network carriers and, to a lesser extent, charter carriers. **Ryanair** was the leader among LCCs.

According to the Polish CAA statistics, the share of LCC passengers served at Polish airports in scheduled traffic in 2024 was **65.43%**.

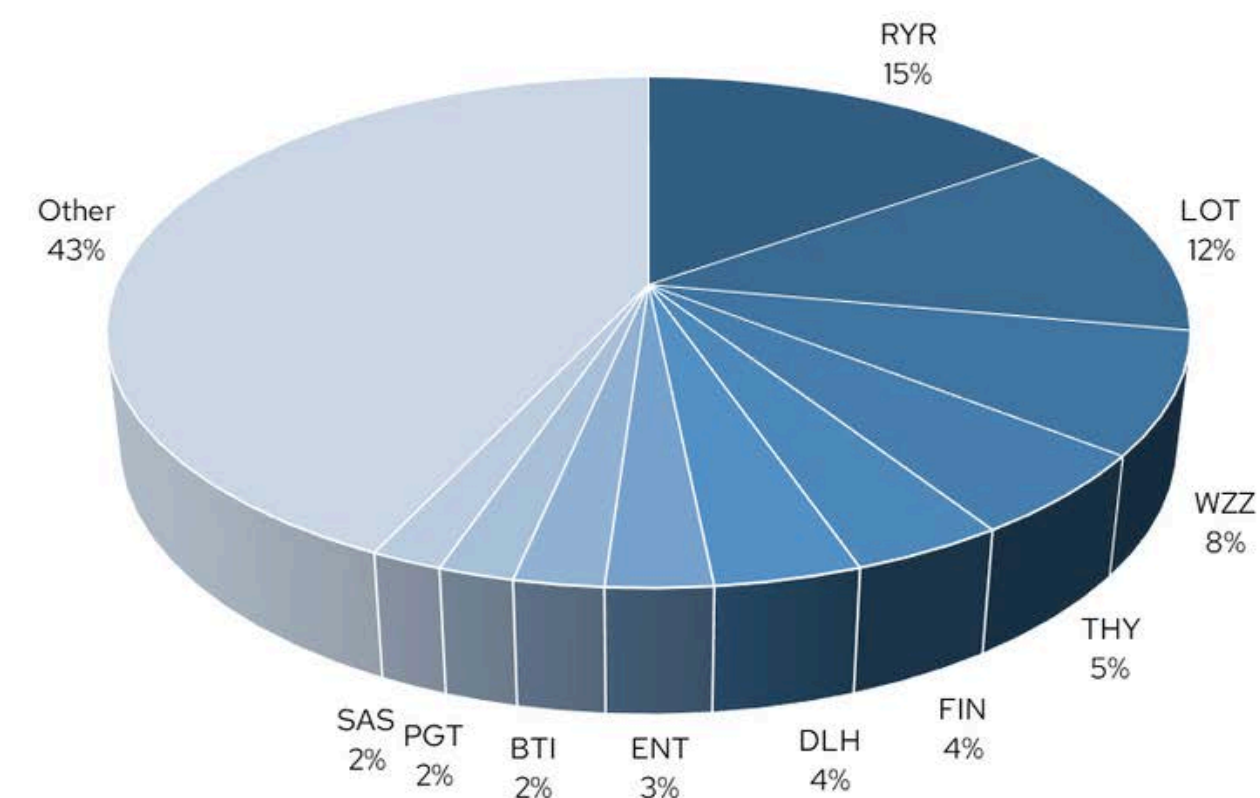
Among network carriers, the largest shares in the number of passengers carried were recorded by PLL LOT (16.69%), Lufthansa (4.54%) and KLM Royal Dutch Airlines (2.24%), while the leading position among airspace users in terms of en-route revenues was taken by Ryanair DAC, Turkish Airlines and PLL LOT (33.28% in total). As regards terminal revenues, the highest share was achieved by three carriers: Ryanair DAC, PLL LOT and Wizz Air Hungary (64.71% in total).

Fig. 4 Share of major users in PANSA's en-route and terminal revenues in 2024



Source: Own elaboration based on EUROCONTROL

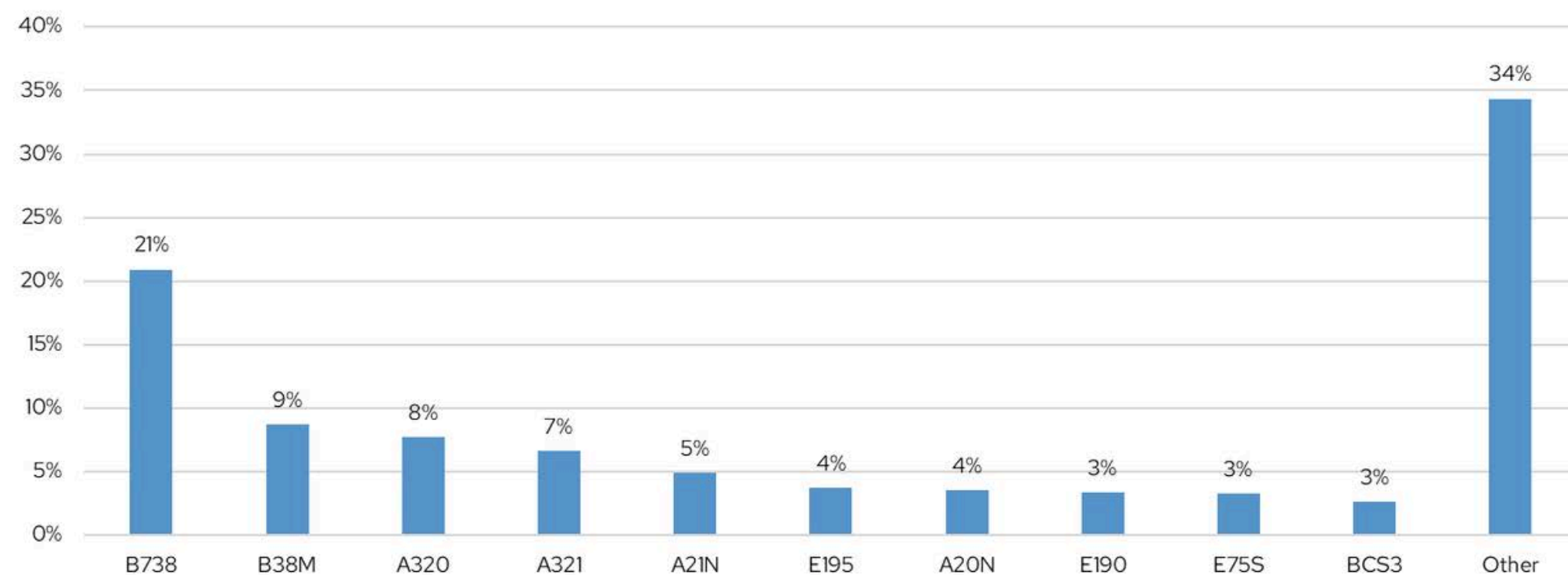
Fig. 5. Share of major carriers in the number of air operations in FIR Warsaw in 2024



Source: Own elaboration

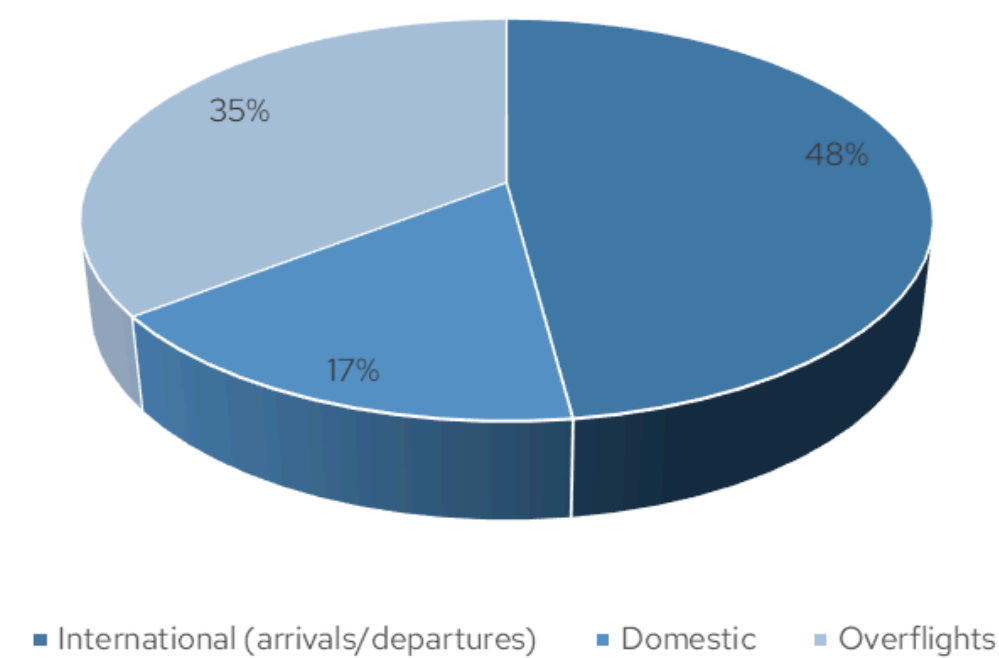


Fig. 6 Share of main aircraft types in the total number of air operations in FIR Warsaw in 2024



Source: Own elaboration

Fig. 7 Air traffic structure in 2024



Source: Own elaboration



En-route operations

The number of en-route operations performed in the Polish airspace in 2024 was higher by 9% compared to 2023. In contrast, the volume of en-route traffic in 2024 in terms of the total number of movements (MVS) was 17% lower compared to that in 2019.

Tab. 1 Total en-route traffic in 2019-2024

Category	Total	
	MVS	SU
2019	912,455	4,971,806
2020	376,969	2,145,811
2021	473,196	2,585,928
2022	626,974	3,128,964
2023	697,190	3,536,911
2024	758,343	3,824,126
Change 2024/2019 (%)	-16.9%	-23.1%
Change 2024/2023 (%)	8.8%	8.1%

Source: Own elaboration

Complex, changing and often unpredictable circumstances due to the increased military activity, including NATO operations, have a significant impact on the air traffic structure and airspace organisation. Internally, actions are being continuously taken to reorganise the airspace to improve the effectiveness of airspace and traffic flow management, which also leads to temporary capacity overruns. The delay target indicator, established at 0.12 min/flight, was set in a period of relatively stable geopolitical situation for circumstances that included predictable traffic flows.

The average en-route ATFM delay for flights handled by the Agency in 2024 reached 0.23 min/flight and was higher than the target set for the year 2024 in the current Performance Plan RP3 (0.12 min/flight).

Terminal operations

In 2024, the volume of terminal traffic measured in the number of movements (MVS) amounted to 476,894, and was 7.5% greater than in the previous year. Compared to 2023, the volume of terminal traffic in 2024 was greater by 10.3%. The number of service units performed in 2024 reached 291,479 SU-L, up by 11.6% compared to 2023. The highest number of terminal movements (MVS) in 2024 was recorded at Warsaw Chopin Airport (182,862 MVS).

In 2024, for the first time since 2019, the volume of arrival traffic to Poland's airports exceeded the level recorded in 2019 (up by 7% compared to 2019), while compared to the previous year (2023), the number of air operations handled grew by 10%.

The average terminal ATFM delay for airports at which PANSA provided aerodrome control services reached 0.49 min/arrival in 2024, with the annual target under the PP RP3 set at 0.23 min/arrival.

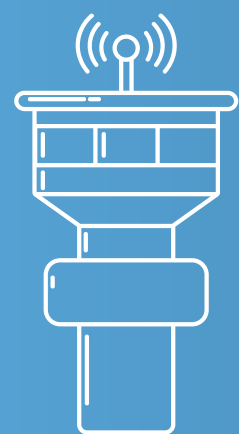
Tab. 2 Total terminal traffic in 2019-2024 (MVS, SU-L)^[4]

Category	Total	
	MVS	SU-L
2019	443,679	246,373
2020	194,403	105,905
2021	238,124	132,008
2022	382,479	224,142
2023	432,535	261,117
2024	476,894	291,479
Change 2024/2019 (%)	7.5%	18.3%
Change 2024/2023 (%)	10.3%	11.6%

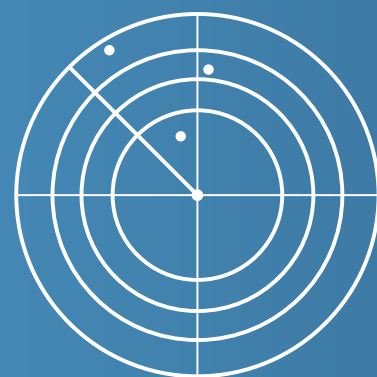
Source: Own elaboration

Terminal delays were generated for EPGD, EPKK, EPKT, EPPO, EPRZ, EPWA and EPWR.

The year 2024 was the final year of the third reference period under the European Union's air navigation services performance scheme for the years 2020-2024, with PANSA pursuing targets in the following four key performance areas:



Safety



Capacity



Environment



Cost efficiency

In 2024, the dominant effect on the performance targets was exerted by adverse outcomes of the war in Ukraine, which had been yet unknown at the stage of development of the PP RP3.

The Agency's activities in 2024 were also aimed at preparing for the next, fourth reference period of the EU's performance scheme, the targets for which were set in the Performance Plan for RP4 (2025-2029) for air navigation services in Poland ultimately adopted by the Minister of Infrastructure on 2 July 2025.



Performance | Key performance areas (KPAs) and key performance indicators (KPIs)

Implementation of the performance targets 2024 set for PANSA in PP RP3, representing participation in the achievement of national targets.

Tab. 3 Achievement of PANSA key performance indicators in 2024

KPA	Name of indicator		Target 2024	Actual 2024
Safety	Safety management effectiveness: as regards risk management		Level D	Level D
	Safety management effectiveness: as regards other safety objectives		Level C	Level C
Environment	En-route horizontal flight efficiency for the actual trajectory		1.65%	4.49%
Capacity	ATFM en-route delays (min/flight) ^[5]		0.12	0.23
	ATFM terminal delays (min/arrival) ^[6]		0.23	0.49
Cost-efficiency ^[7]	The determined unit cost (DUC) for en-route air navigation services – in the part concerning PANSA (in PLN)		144.22	197.96 ^[8]
	The determined unit cost (DUC) for terminal air navigation services – in the part concerning PANSA (in PLN)	Warsaw	417.31	439.26 ^[9]
		Other airports	708.42	790.71 ^[10]

Source: Own elaboration

[5] This indicator covers all causes of delays. The figure includes delay corrections resulting from the post-operations delay adjustment process coordinated by the network manager, which brought a reduction in minutes of en-route delays attributed to PANSA by 3,437 minutes

[6] This indicator covers all causes of delays

[7] Cost efficiency understood as the ratio of the Agency's determined costs in the ANSP table, for en-route services, and PANSA ANSP tables, for terminal services (expressed in 2017 prices), and the number of service units

[8] Data consistent with en route reporting tables submitted to European Commission on 29th October 2025

[9] Data consistent with terminal reporting tables for I terminal charging zone submitted to European Commission on 29th October 2025

[10] Data consistent with terminal reporting tables for II terminal charging zone submitted to European Commission on 19th December 2025

In accordance with Commission Implementing Regulation (EU) 2019/317, key performance indicators in the area of safety include the minimum level of the effectiveness of safety management to be achieved by air navigation service providers certified to provide air traffic services (ATS). Achievement of individual safety objectives is measured with the use of the following key indicators:

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

The safety targets set in the PP RP3 2024 in all five areas were achieved.

In 2024, the Agency continued actions planned for RP3 under PP RP3 aimed at developing processes and tools to strengthen the effectiveness of safety management, in particular:

1. Continuation of the development of safety culture at PANSa through implementation of the safety culture enhancement programme based on conclusions and recommendations from an external safety culture review.
2. Promotion of safety by means of, among others, organising workshops for LSEs and inspectors, and the Safety Day for the ATS personnel, and adapting their topics to the demand arising from the findings of occurrence investigations and safety reviews.
3. A basic training course in the Safety Management System was conducted for all PANSa employees in both classroom and e-learning formats.
4. Development of new IT tools functionalities to enable enhancement of effectiveness of SMS processes.
5. In 2024, as part of broader cooperation with international industry organisations aimed at exchanging best practices, PANSa established contact with EASA to explore Agency's involvement in the Data4Safety programme.

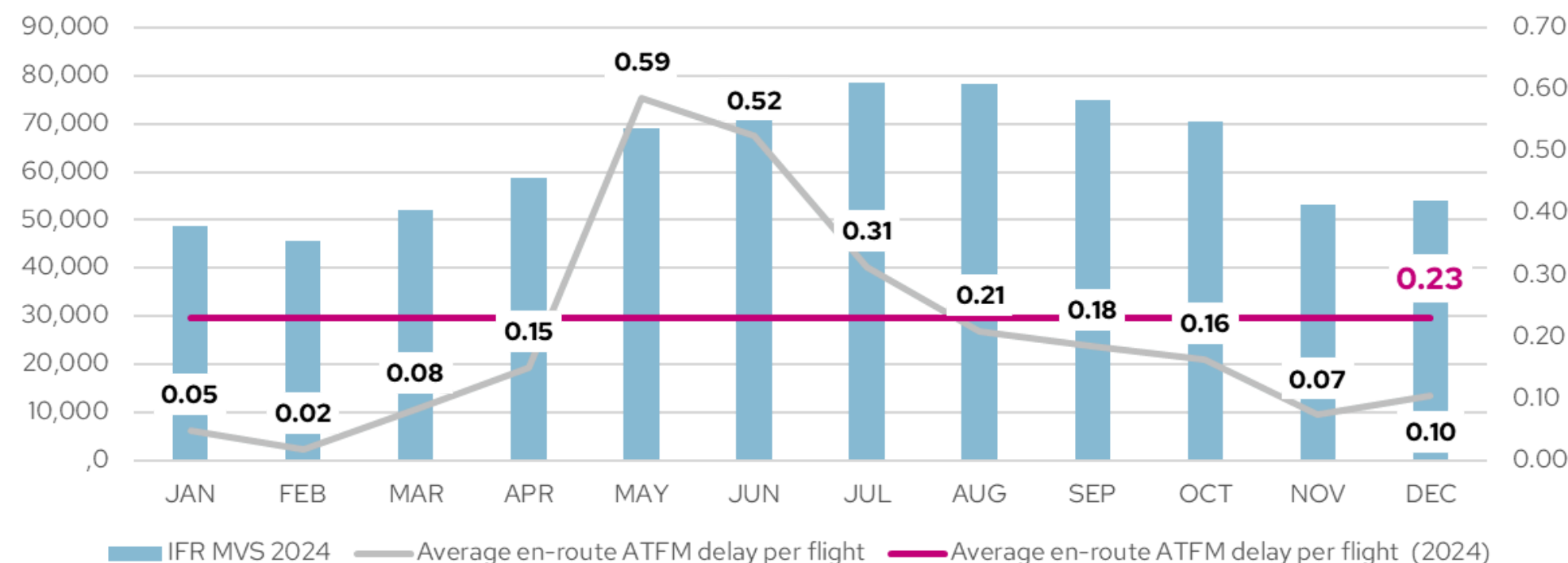
En-route delays

The volume and complexity of air traffic in the Polish airspace significantly affect both en-route and terminal delay values.

The average en-route ATFM delay for flights handled by the Agency in 2024 reached 0.23 min/flight and was higher than the target set for the year 2024 in the current Performance Plan RP3 (0.12 min/flight).

Failure to reach the set target stems from, in particular, the outcomes of the geopolitical situation, i.e. the complex, volatile and often unpredictable situation due to the increased military activity, including the increased number of military zones and greater frequency of use of the existing zones, which had not been predicted at the stage of developing the PP RP3.

Fig. 8 Average en-route ATFM delay



Source: Own elaboration

The number of delay minutes in the Polish airspace in 2024 was 171,611, of which 58% were ATC-related delays, including ATC Capacity 32% and ATC Staffing 24%. Delays relating to weather conditions (20%) and directly relating to the war in Ukraine (21%) had a significant impact on the value of en-route delays.

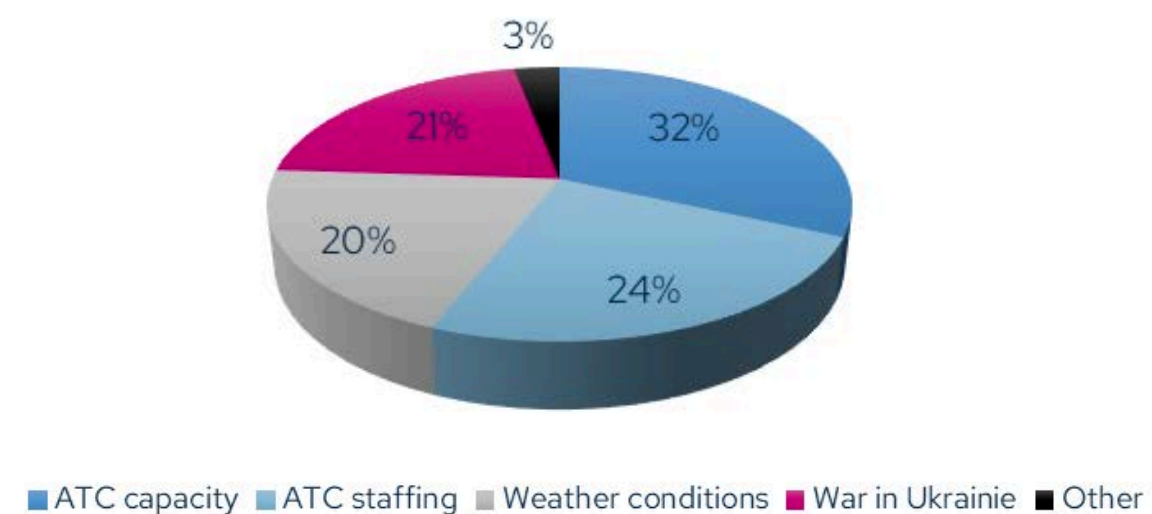
En-route delays

Tab. 4 En-route delays in 2019-2024

Category	2019	2020	2021	2022	2023	2024
En-route delays (min/flight)	0.12	0	0.07	1.09	0.2	0.23
Target for a given year (min/flight)	0.23	0.3	0.07	0.12	0.12	0.12

Source: Own elaboration

Fig. 9 Causes of en-route ATFM delays in 2024



Source: Own elaboration



Terminal delays

Terminal delays in 2024 were generated for the following airports: EPGD, EPKK, EPKT, EPMO, EPPO, EPRZ, EPWA, EPWR.

The average terminal ATFM delay for airports at which PANSA provides aerodrome control services reached 0.49 min/arrival in 2024, with the annual target under the PP RP3 set at 0.23 min/arrival.

Tab. 5 Terminal delays for EPWA and other airports

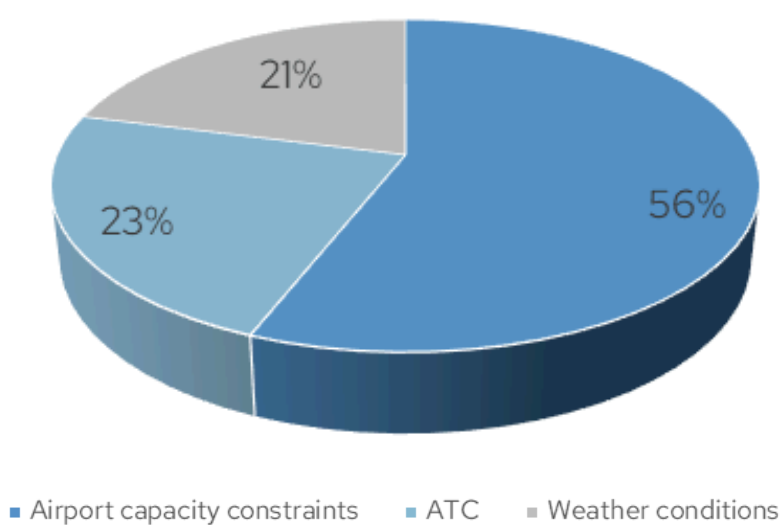
Terminal delays in a given year (min/arrival)	2019	2020	2021	2022	2023	2024
Poland	0.39	0.02	0	0.04	0.19	0.49
EPWA	0.86	0.04	0	0.02	0.36	0.8
Other airports	0.02	0.01	0	0.06	0.08	0.3
Target for a given year, Poland	0.04	0.45	0.02	0.21	0.24	0.23

Source: Own elaboration

In 2024, the terminal delay indicator was affected by:

- delays related to airport capacity limitations (accounting for 56%),
- delays generated by ATC (accounting for 23%),
- delays related to weather conditions (accounting for 21%).

Fig. 10 Causes of terminal delays in 2024



Source: Own elaboration

The environmental impact of air transport is monitored within the performance scheme with the use of the average horizontal en-route flight efficiency indicator. The KEA uses radar generated trajectories and compares their length with the actual trajectory. The KEA set for Poland in 2024 in the PP RP3 was 1.65%, whereas the actual value achieved was much higher and reached 4.49%.

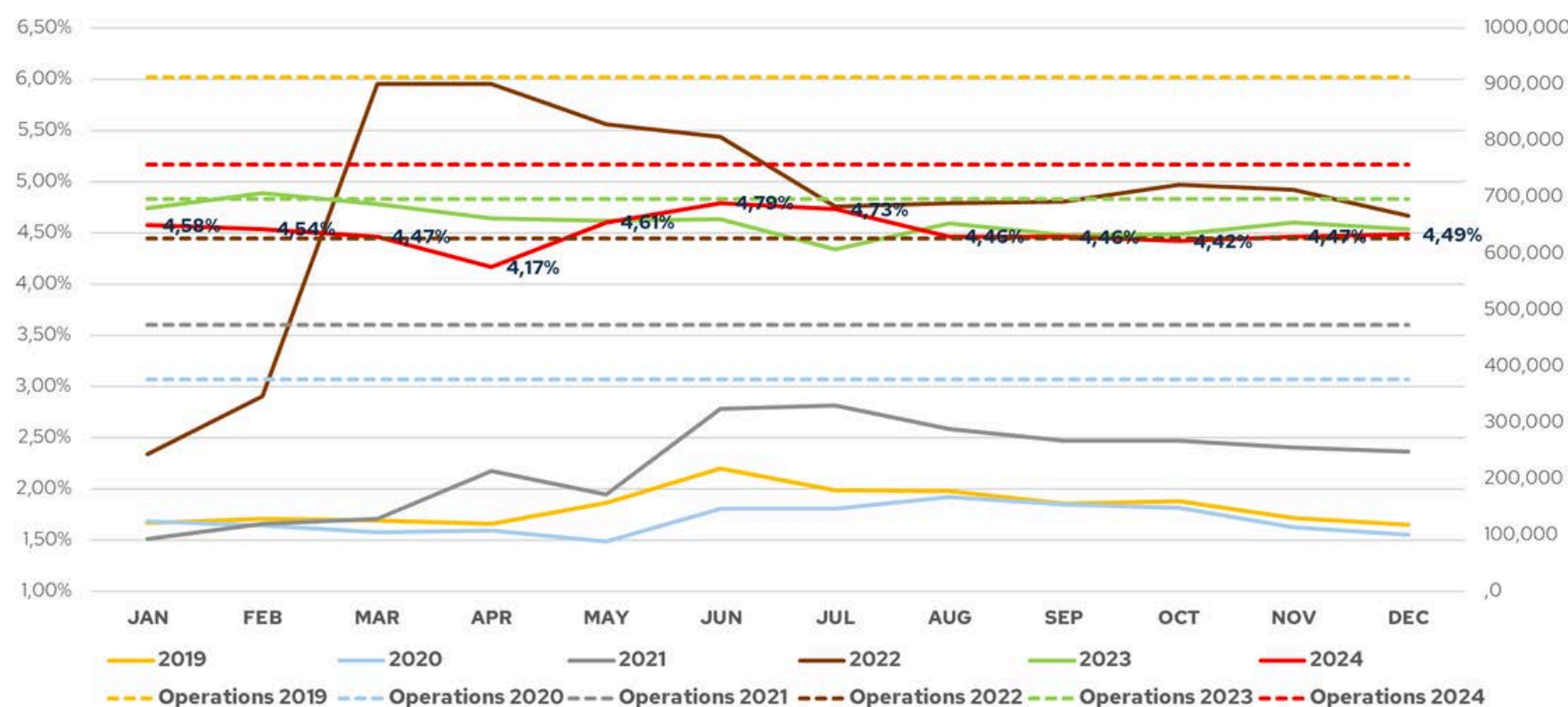
Impact on the achievement of the indicator

The KEA value was negatively affected by the closure of the Ukrainian airspace to air traffic and the imposition of sanctions that restricted flight operations in the Russian and Belarusian airspace. It showcases that the ANSPs impact on the environmental indicator is negligible, as the KEA is determined by external factors that are beyond control of air navigation service providers.

The chart below shows changes in the KEA since the outbreak of the war in Ukraine (February/March 2022) with reference to the horizontal en-route flight efficiency indicator for the actual trajectory on a monthly basis (HFE), strictly correlated with the KEA.



Fig. 11 HFE indicator (Poland) in 2019-2024



Source: Own elaboration based on EUROCONTROL/AIU

As part of its efforts to minimise the negative impact of aviation on the environment, the Agency carried out actions in 2024 that included, in particular:

- Enabling enhanced en-route flight efficiency in the en-route space related to the implementation of successive FRA stages, including the implementation of cross-border FRA adapted both to the needs of airspace users and the specificity of the Polish airspace, which can have a positive impact on the level of CO2 emissions. In 2024, cross-border FRA operations with Sweden and Czechia were implemented.
- Development of procedures for cooperation between AMC Poland and FMP Warsaw to support flexible use of airspace.
- Development of tools for automated exchange of information on activities within military zones and ASM support systems in order to optimise the process of releasing military zones to civilian traffic.
- Maintenance of the working technology and procedures of ATC services to enable aircraft crews to apply CCO/CDO take-off/landing techniques.

The unit cost, an indicator in the area of cost efficiency, is derived from three elements:

1. the costs in nominal terms,
2. the cumulative inflation index, with 2017 as the baseline throughout RP3,
3. the number of service units.

The value of the actual unit cost in 2024 as compared to the value set in the applicable PP RP3 was influenced by deviations in all three of the aforementioned elements, with the direction of impact of the respective elements, also within respective charging zones, not being uniform.

Regarding costs expressed in real terms, it should be noted that the actual inflation level in 2021-2024 was significantly higher than assumed in the PP RP3. Those differences resulted in a higher actual inflation index level than that specified in the RP3 assumptions. A higher inflation index results in a lower value of costs in real terms.

For en-route services the difference between the actual value and the target is determined by lower level of traffic resulting from the geopolitical situation.

Tab. 6 Achievement of cost-efficiency targets in 2024

KPA	Indicator		Target 2024	Actual 2024
Cost efficiency	The Determined Unit Cost (DUC) for en-route air navigation services – in the part concerning PANSa (in PLN)		144.22	197.96 ^[11]
	The Determined Unit Cost (DUC) for terminal air navigation services – in the part concerning PANSa (in PLN)	Warsaw	417.31	439.26 ^[12]
		Other airports	708.42	790.71 ^[13]

Source: Own elaboration

[11] Data consistent with en route reporting tables submitted to European Commission on 29th October 2025

[12] Data consistent with terminal reporting tables for I terminal charging zone submitted to European Commission on 29th October 2025

[13] Data consistent with terminal reporting tables for II terminal charging zone submitted to European Commission on 19th December 2025

SAFETY MANAGEMENT SYSTEM

To continuously improve the **Safety Management System (SMS)**, PANSA performs periodic tests of the system maturity based on EASA, CANSO and EUROCONTROL guidelines. The results of the tests allow identification of all areas that need improvement. Such an approach is key to developing and implementing new methods, tools and ways of information flow. PANSA will take successive actions that arise from the conclusions of the aforementioned maturity tests, external analyses and management assessments in order to ensure proper functioning of the safety management system and appropriate level of performance in the area of management, and to enable the achievement of the targets set in the Performance Plan (PP).

Our approach to safety management includes, among others:

- promoting comprehensive understanding of all aspects of safety,
- learning from occurrences and incidents that affect safety,
- promoting the Just Culture principle (looking for causes rather than parties to blame for an occurrence),
- sharing SMS data and information in the "Overview of best practices and novelties in the area of SMS" bulletin, for the benefit of airspace users and the whole aviation community,
- publishing PANSA Safety Bulletins "Safe Sky".



Occurrences in 2024:

- there were no aviation accidents with human fatalities where the main cause would be ATM/ANS involvement,
- there was an increase in the number of notifications by 34.57% compared to 2023, with a parallel increase in the number of air operations in FIR Warsaw,
- 3,196 occurrence notifications were recorded in the TOKAI system,
- the increase in the number of notifications comes as a result of the organisation's maturity and greater awareness on the part of notifiers, which is evidenced by an increase in the number of occurrences in the voluntary occurrence reporting (VOR) system by 59.38% compared to 2023,
- an increase in the number of occurrences in the mandatory occurrence reporting (MOR) system by 11.29% compared to 2023.

Based on the findings of investigations into the notified occurrences, the following were classified in 2024^[15]

- 0 aviation occurrences in severity class "A" – serious incident,
- 7 aviation occurrences in severity class "B" – major incident,
- 33 aviation occurrences in severity class "C" – significant incident.

In 2024, the highest risk severity occurrences (ABC) monitored by PANSA involved such key areas as:

- airspace infringement,
- human factor; an occurrence where a human action directly contributed, or could have contributed, to the occurrence,
- loss of separation,
- Airborne Collision Avoidance System Resolution Advisory (ACAS RA).

1,046 notifications of technical occurrences were recorded in 2024, representing an increase by 147.51% compared to 2023, including 306 occurrences in the mandatory occurrence reporting (MOR) – an increase by 161.54% compared to 2023, 736 occurrences in voluntary occurrence reporting (VOR) – an increase by 142.11% compared to 2023, 4 occurrences without a specific reporting mode. GPS/GNSS signal interference accounted for a significant number of occurrences in the technical record, including interference reported by aircraft crews. It must be noted that the number of occurrences involving interference with GPS/GNSS signals is much higher, as a single entry can record multiple GPS/GNSS interference occurrences.

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

The **Polish Air Navigation Services Agency complies with international, EU and national laws on civil aviation security**. The Agency carries out all tasks prescribed by law in the areas of facility security, facility defence and crisis management. Awareness campaigns are being conducted among PANSA personnel to raise the level of knowledge of cyber-security threats and to apply effective methods of protection against these threats.

In 2024, the Polish Air Navigation Services Agency started efforts to join **Data4Safety**, a programme run under the aegis of the European Union Aviation Safety Agency (EASA).

Also in 2024, the Agency reopened work on launching an automatic **safety monitoring tool (ASMT)**.

^[14] Data source: Report on the Level of ATM/ANS Safety Indicators 2024
^[15] Data source: TOKAI database as at 16 October 2025

The **ATS Personnel Training Centre (OSPA)** of the Polish Air Navigation Services Agency employs instructors and simulator operators as well as other specialists who enable the Centre to meet the requirements of the constantly changing rules and regulations. OSPA is different from other PANSA units. The Training Centre, albeit a part of the Training Office structure, is in fact a separate organisation certified by the Polish CAA independently from the rest of the Agency.

The training is upgraded every year as the Agency implements solutions based on research and knowledge and revises its attitude to the new generation of candidates. PANSA sets an example how to digitalise work and communicate better. The purpose of the training is to deliver suitably qualified personnel required to provide air traffic control (ATC) and flight information services (FIS).

The year 2024 marked a period of intensive development and modernisation for the ATS Personnel Training Centre. The goal was to enhance the effectiveness of the training process, improve the quality of education and implement innovative solutions to support both the instructors and trainees.

The most important achievements included:

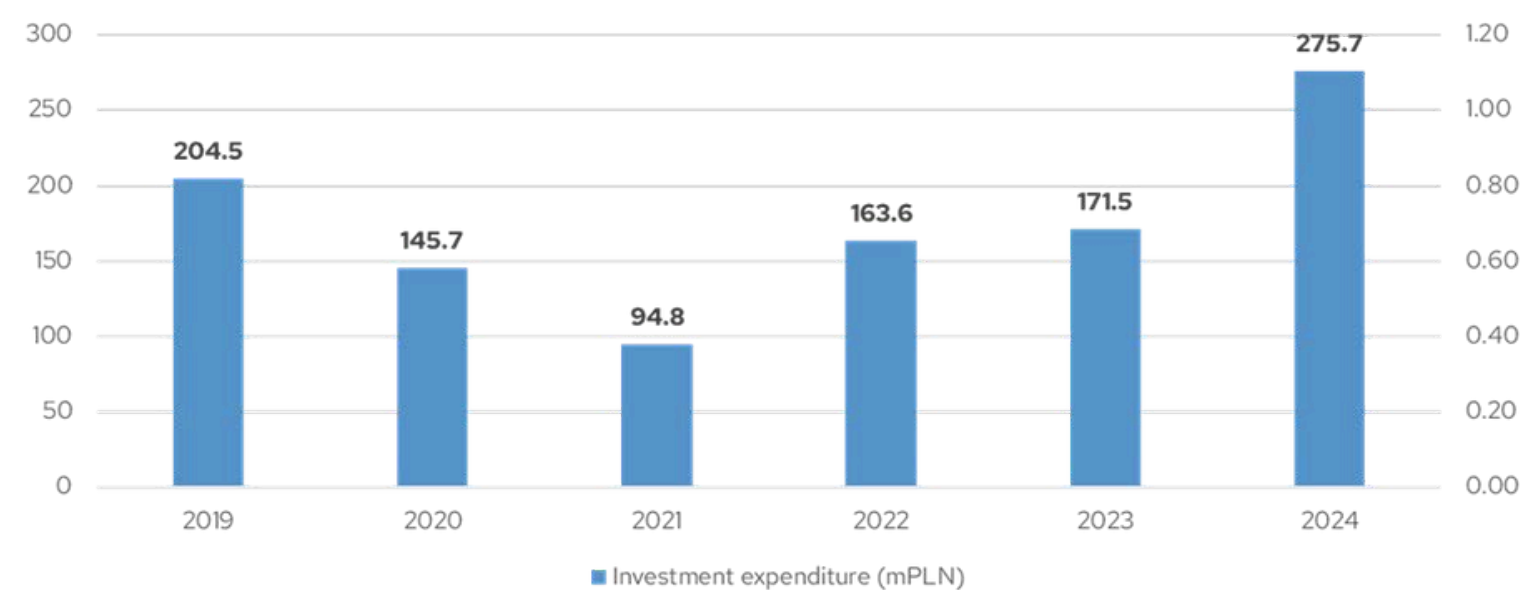
1. Radical increase in the training potential for air traffic controllers.
2. Establishment of a modern means of mass communication by launching the ATS Personnel Training Centre website.
3. Investment in adjusting and updating the simulator software which will enable making the initial training significantly more realistic in 2025. It will allow trainees to make an easier start on their jobs in live operational traffic, translating to increased training effectiveness.
4. Start of the construction and implementation of the electronic training handling system, e-OSPA.
5. Deployment of a new centralised recruitment procedure for instructors to enable professional assessment of training competencies and aptitudes in order to select the best candidates possible in an organised and objective manner.
6. Modernisation of the classrooms as an action supporting the education process.
7. Enhancement of the quality of the initial training.
8. Training programme update in response to the growing needs of the Operations Office and the Training Centre's capabilities.



Investments made by the Agency are aimed primarily at ensuring continuity of air navigation services in the Polish airspace and the capacity required for the support of air traffic, while maintaining the highest standards of safety and environmentally sustainable approach.

PANSA's expenditure on upgrading and building state-of-the-art CNS/ATM and facility infrastructure in 2024 amounted to PLN 279.3 million PLN, including corrections: 275.7 million PLN, the highest level in PANSA's history. The value of the investments in 2024 was 104.2 PLN million higher compared to 2023 (up by 61%).

Fig. 12 Investment expenditures incurred in 2019 – 2024



Source: Own elaboration

Tab. 7 Main investment projects under way in 2024

Project name	Expenditure incurred (mPLN)
iTEC system	39.89
Modernisation of the ATM system	24.92
Campus	23.2
Radar MSSR PSR Gdańsk	18.64
Radar MSSR PSR Katowice	16.43

Source: Own elaboration

PANSA pursues its strategic objectives in the areas of safety, capacity, environment and cost-efficiency while safeguarding its operational needs, including in terms of ensured continuity of air navigation services and the implementation of activities arising from European air transport development programmes and strategies, i.e. ATM Master Plan and SESAR Programme, for which the development of state-of-the-art infrastructure is essential.



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 air traffic safety, the negative impact of aviation on the environment can also be reduced. PANS makes efforts to enable, among other things, the reduction of aircraft fuel consumption and carbon dioxide emissions. PANS carries out these 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 greenhouse gas emissions by 2050.

Free Route Airspace (FRA) is a specified volume of airspace in which users are free to plan their route between defined entry and exit points. Depending on the availability of airspace, routing is possible via intermediate waypoints, without reference to the air traffic services (ATS) route network. Flights within this airspace remain subject to air traffic control. Air operators can conduct flights in the variant that is closest to their preferred trajectory without being restricted by rigid airspace structures or rigid route networks. Shorter routes, already at the flight plan level, mean less fuel taken on board and, in consequence, the ability to transport more passengers or goods.

Korzyści dla instytucji zapewniających służby żeglugi powietrznej:

- zwiększona przewidywalność ruchu dla kontrolerów ruchu lotniczego;
- możliwość lepszego rozlokowania konfliktów w porównaniu z silną ich koncentracją generowaną na głównych węzłach bieżącej sieci stałych tras;
- wzrost przewidywalności danych w systemach użytkowanych w Zarządzaniu Pojemnością i Przepływem Ruchu Lotniczego;
- zmniejszenie ilości niezbędnych transmisji KRL ACC GAT dotyczących skrótów taktycznych.

Implementation of Free Route Airspace in the Polish airspace brings tangible effects to the environment as the number of users increases with the growth in traffic following the Covid-19 pandemic. The number of FRA operations increased from 266,651 to 720,142 between 2021 and 2024, which reduced CO₂ emission by a total of 163,799 tonnes.

Tab. 8 Environmental benefits from the implementation of FRA in the Polish airspace in 2021 – 2024

	2021	2022	2023	2024
Number of operations	266,651	596,683	682,989	720,142
Reduction of flight distance (NM)	991,424	2,218,503	2,539,394	2,677,531
Reduction of flight time (min)	138,108	309,043	353,744	372,987
Reduction of fuel consumption (tonnes)	6,110	13,650	15,624	16,474
Reduction of CO ₂ emissions (tonnes)	19,227	43,136	49,375	52,061

Source: Own elaboration



Pro-environmental Activities by PANSA

CDA – Continuous Descent Approach, the so-called "green approach", i.e. a technique that enables aircraft to perform smooth, uninterrupted descents, preferably straight from the cruise altitude. Wherever possible, controllers also allow pilots to select the optimum rate of descent with minimum engine thrust. This technique provides for significant reductions in emissions and aircraft noise.

It is estimated that the use of CDA reduces fuel consumption by up to 46 kg per flight, thus reducing carbon dioxide emissions by 145 kg, while flight noise during descent is reduced by 1-5 dB, depending on the circumstances and type of aircraft. PANSA has contributed to increasing the use of CDA at the largest airports in Poland. Notably, the Agency is among European leaders in using the CDA technique. The share of CDA operations, i.e. the ratio of "green approaches" to the total number of landings, ranged at Polish airports from 30% in Wrocław to as much as 53% in Gdańsk and Szczecin, with the total figure reaching 44.7%.

In 2024, the use of the CDA technique at nine main airports in Poland allowed reducing potential carbon dioxide emissions to air by a total of 13,884 tonnes, leading to fuel savings of 4,405 tonnes of aviation fuel.

At selected European airports, the share of CDA operations ranged from 19% at Charles de Gaulle Airport in Paris to 58% at Prague Airport. The average CDA ratio for all airports stands at 33%, which puts the results achieved by the airport in Warsaw (54%) on the third position among the analysed airports (Warsaw, Charles de Gaulle, Frankfurt Main, Heathrow, Brussels National, Schiphol, Schwechat, Barcelona, Arlanda, Ruzyně). In 2024 the recorded number of CDA operations grew from 32.1% to 33.1% across Europe.

Tab. 9 Pro-environmental benefits from the application of the CDA technique in 2024

2024	EPWA	EPKK	EPGD	EPKT	EPWR	EPPO	EPRZ	EPSC	EPLB	Total
CDA indicator	46%	45%	53%	36%	30%	35%	34%	53%	44%	45%
Fuel saved (tonnes)	1,931	781	626	370	251	230	119	62	34	4,405
Reduction of CO2 emissions (tonnes)	6,086	2,462	1,972	1,167	792	725	376	195	108	13,884

Source: Own elaboration based on EUROCONTROL/AIU

PANSA also cares for the environment by introducing new technologies, carrying out regular inspections and upgrading its infrastructure.

The Agency achieves environmental savings also through non-aviation activities, e.g. environmental training for all employees and proper segregation and disposal of waste, and the procedures in place provide for repurchase of phased out equipment.



620 / 30%



1,449 / 70%



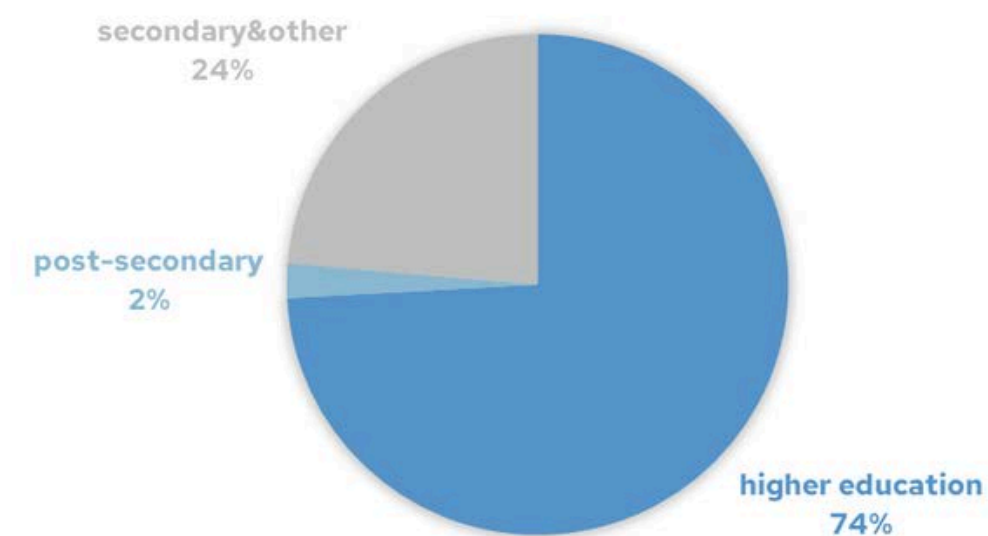
2,069 / 100%

As at 31 December 2024, the Agency employed **2,069 people**.

Average age of a PANSA employee – **43.39 years**,

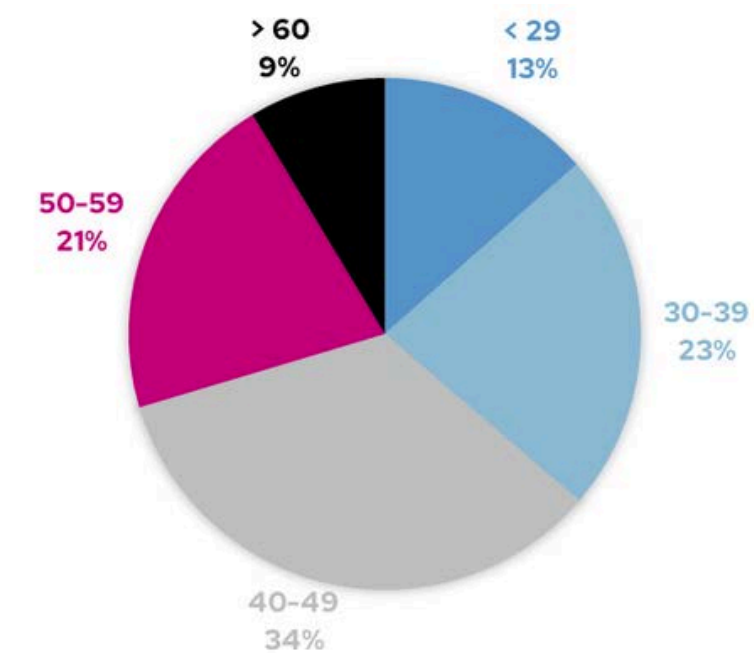
Average age of an ATCO – **43.40 years**.

Fig. 13 Educational structure of PANSA personnel (as at 31 December 2024)



Source: Own elaboration

Fig. 14 Age structure of PANSA personnel (as at 31 December 2024)



Source: Own elaboration

Tab. 10 Employment in FTEs and persons as at 31 December 2024 compared to employment as at 31 December 2023

PRU Category		Employment in FTEs		Difference	Employment in persons		Difference
		31.12.2023	31.12.2024		31.12.2023	31.12.2024	
x	x	1	2	3 (2-1)	4	5	6 (5-4)
1	ATCO in OPS	576.65	584.46	7.81	587.1	596	8.9
2	ATCO on other duties	23.65	24.5	0.85	23.9	25	1.1
3	Ab Initio Trainee Controllers	68.75	84	15.25	69	84	15
4	On-the-Job Training (OJT)	47.5	64.25	16.75	52	69	17
5	ATC assistants	44.75	62.5	17.75	46	63	17
6	OPS support non-ATCOs	340.94	359.38	18.43	343.95	362.25	18.3
7A	Technical support staff for operational CNS/ATM, monitoring and control systems	311	329.15	18.15	313	332	19
7B	Technical support staff for the development and implementation of CNS/ATM systems	70.55	98.6	28.05	72.6	101	28.4
8	Administrative staff	350.5	350.35	-0.15	354.7	355	0.3
9	Support service staff	48.75	55.75	7	48.75	55.75	7
10	Other staff	27	25.5	-1.5	28	26	-2
Total		1,910.04	2,038.43	128.39	1,939.00	2,069.00	130.00

Source: Own elaboration



The **international cooperation** of the Polish Air Navigation Services Agency is multifaceted. Our partners include air navigation service providers in other countries as well as international institutions, industry associations and organisations such as:

- ICAO,
- EUROCONTROL,
- CANSO,
- NATO,
- European institutions, including the European Commission,
- Union agencies and bodies, such as:
 - EASA,
 - SESAR Joint Undertaking,
 - SESAR Deployment Manager.

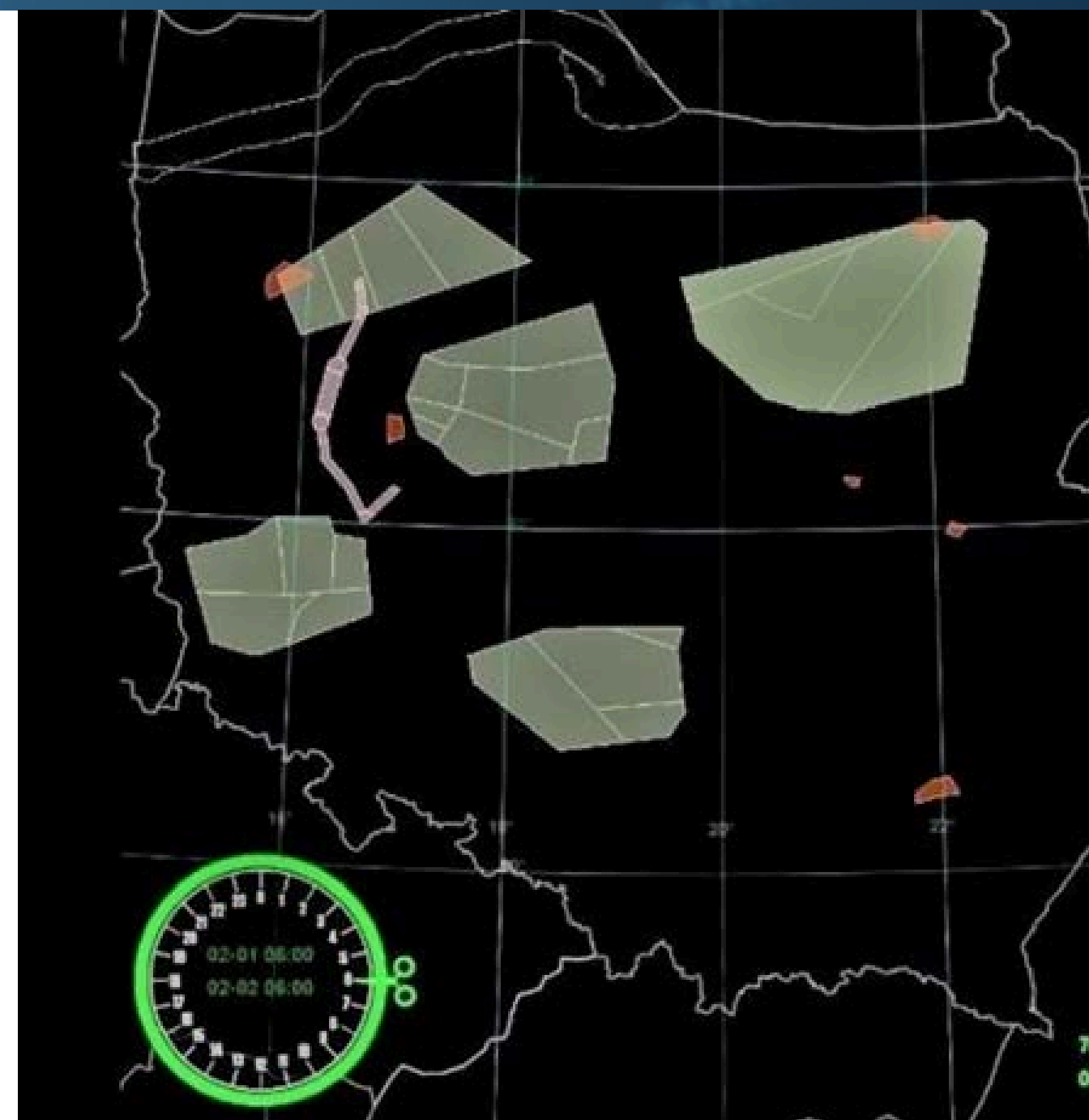
The area of international cooperation includes also PANSA's activities and efforts within:

- Baltic FAB,
- A6 Alliance,
- iTEC cooperation.



PANSA makes its presence strongly felt in European research and development projects coordinated by the SESAR Joint Undertaking. In 2024, as part of **SESAR's R&D programme** (known as the Digital European Sky), the Agency continued execution of the following projects:

- AMPLE3, a project involving preparation of a new version of the ATM Master Plan (2025 edition);
- HARMONIC, a project supplementing the key aspects of the Demand and Capacity Balancing (DCB) operational concept; PANSA's work in this project encompasses Dynamic Airspace Configuration (DAC);
- CNS DSP, a project concerning a future model of the provision of data sharing services (a smart digital platform based on pan-European ATM data service layer, providing advanced cloud-based services for ATM/CNS applications);
- MITRANO, a project aimed at increasing the civil-military interoperability and coordination, enhancing solutions for mission trajectory management and collaborative decision making at the network level and in ATC operations;
- NETWORK TBO, a project aimed at defining the operational assumptions, services and systems that support flight trajectory changes initiated by AU, NM or Flow Management; the project is in line with defining the operating framework of the FF-ICE/R2 standard "Trajectory Revision in strategic execution";
- ATC TBO, a project aimed at increasing automation in the planning and separation management sectors by enhancing the trajectory predictions and improving control tools, and increasing Air/Ground trajectory synchronisation.
- iSNAP, a project involving evolution of the current iTEC platform architecture to support the virtual centre concept by deployment of state-of-the-art digital technologies, basic architectural principles and use of commercial off-the-shelf (COTS) products. The aim is to enable separation of ATM service provision from the infrastructure with the use of the existing iTEC collaboration via partners and on the basis of the agreed capacity-building roadmap to ensure full compatibility with ATM MP.



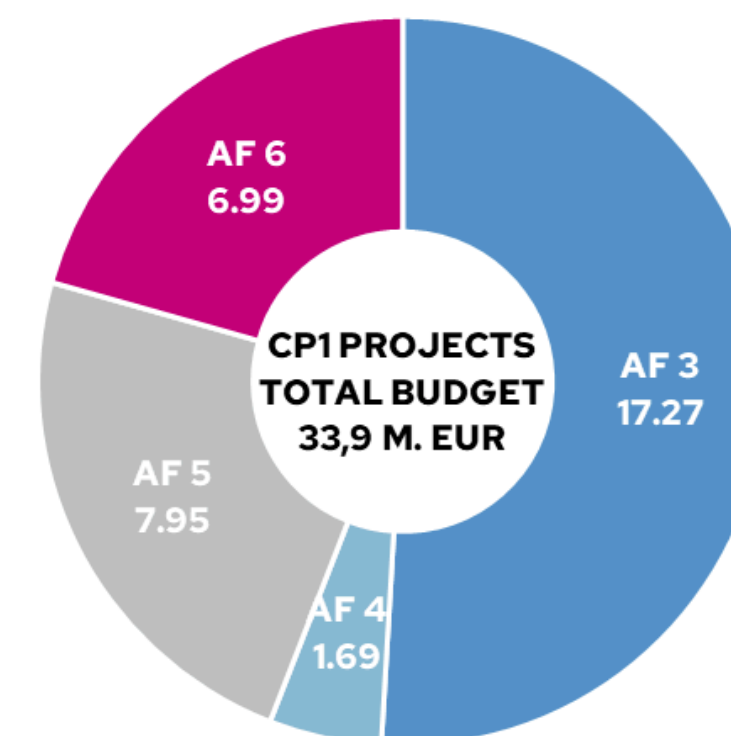


In 2024, PANSA continued its participation in the SESAR Deployment process, both as an Implementing Partner and as a Member of the **SESAR Deployment and Infrastructure Partnership (SDIP)**.^[16]

As an Implementing Partner, PANSA continued to implement the deployment projects launched in the previous years with EU co-financing under the **CEF Transport Calls for Proposals**. In addition, in 2024, responding to the successive CEF Transport Call for Proposals announced last year, PANSA developed and submitted another project proposal in line with the so-called Common Projects.

As a member of the SDIP, PANSA representatives participated in the work of the **SDIP Supervisory Board**, the supervisory body of the SDIP consortium, contributing to the implementation of the on-going functions of the partnership.

Fig. 15 Total budget (M EUR) for SESAR CP1 projects by individual ATM functionalities



Source: Own elaboration

Common Projects implemented by PANSA, covering the ATM AF3-AF6 functionalities in accordance with Commission Implementing (EU) 2021/116, are contributing to synchronised implementation of technological solutions that increase the levels of automation, cyber-secure data sharing, and connectivity in air traffic management.

^[16] Under Commission Implementing Regulation (EU) No. 409/2013, the consortium of SESAR Deployment Alliance was established in December 2014 and acted as the SESAR Deployment Manager until the end of 2017. Effective in January 2018, the consortium was transformed into a legal entity, SESAR Deployment Alliance (Association Internationale Sans But Lucratif (AISBL)). Beginning on 1 June 2022, the role of the SESAR Deployment Manager is played by the new consortium SESAR Deployment and Infrastructure Partnership established by 14 European ANSPs, 4 European airlines, the European Airports Association and EUROCONTROL/Network Manager

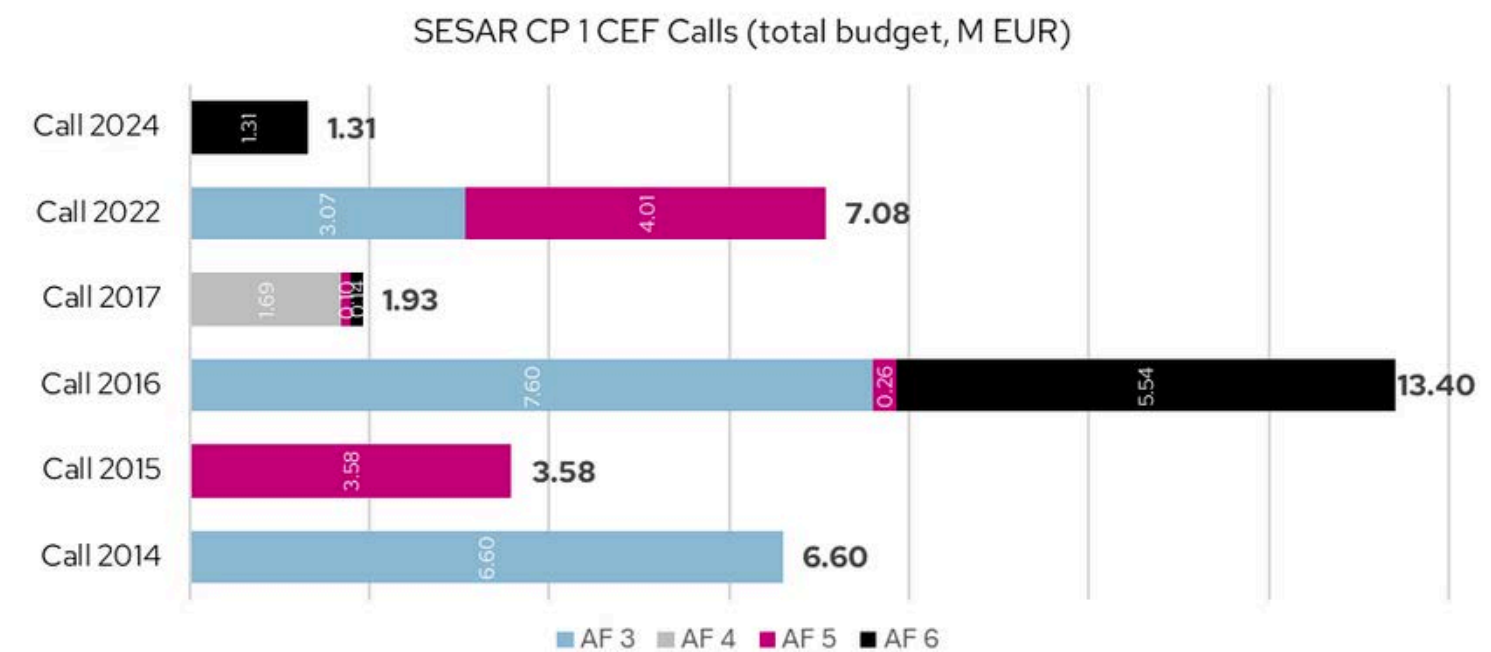


Tab. 11 Projects associated with the SESAR Programme deployment process (Pilot Common Project/Common Project 1) co-financed from EU funds under the CEF Transport Call for Proposals in which PANSA is involved either as a leader or as a contributor

CP 1	CEF Call	Project	Budget (EUR)	EU co-financing (EUR)
AF 3	Call 2014	1st part of the upgrade of the P_21 to SESAR – Test and Validation Platform (project completed)	6,600,000	3,300,000
AF 3	Call 2016	ATM System Upgrade towards Free Route Airspace (project completed)	5,880,000	2,528,400
AF 3	Call 2016	iTEC Tests, Validations and Planning (iTEC-TVP) (project completed)	1,716,360	738,034
AF 3	Call 2022	Clean ATM, Cross-border FRA	3,072,553	1,536,277
AF 4	Call 2017	Local traffic complexity management (project completed)	1,694,000	847,000
AF 5	Call 2015	LAN network upgrade (project completed)	2,009,500	1,708,075
AF 5	Call 2015	The ECG Communication System upgrade (project completed)	1,567,500	1,332,375
AF 5	Call 2016	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS (project completed)	145,900	62,737
AF 5	Call 2016	Deploy SWIM Governance (project completed)	90,400	38,872
AF 5	Call 2016	European Deployment Roadmap for Flight Object Interoperability (project completed)	25,000	10,750
AF 5	Call 2017	SWIM Common PKI and policies & procedures for establishing a trust framework (project completed)	101,515	50,758
AF 5	Call 2022	Clean ATM, Acceleration of Aeronautical Digital Information Availability (ACADIA)	1,870,528	935,264
AF 5	Call 2022	Clean ATM, ASM SWIM	635,866	317,933
AF 5	Call 2022	Clean ATM, FF-ICE R1 – eFPL (TRAFFIC)	1,502,589	751,295
AF 6	Call 2016	Implementation of Data Link Service for the ATM in FIR Warsaw (project completed)	5,247,102	2,256,253
AF 6	Call 2016	DLS Implementation Project – Path 2 (project completed)	148,805	63,986
AF 6	Call 2016	General Call – DLS Implementation Project – Path 1 "Ground" stakeholders (project completed)	142,501	61,275
AF 6	Call 2017	IP1 DLS European Target Solution assessment (project completed)	139,600	69,800
AF 6	Call 2024	Clean ATM 3, Development and implementation of a service for receiving, visualizing and distributing data for ATM system	1,310,681	655,340
Suma			33,900,400	17,264,423

Source: Own elaboration

Fig. 16 Total budget (in EUR millions) for SESAR CP1 projects by individual CEF Calls



Source: Own elaboration



In 2024, the Agency continued to participate in all activities of the A6 Alliance, which brings together Europe's largest air navigation service providers (from e.g. Germany, the United Kingdom, France, Spain, Italy, Switzerland):

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

In 2024, the President of PANSA Magdalena Jaworska – Maćkowiak acted as the Chair of the A6 Steering Board. The most important results achieved during PANSA's leadership in the A6 Steering Board include, among others, signing a declaration between ANSPs and representatives of the manufacturing industry regarding a new service delivery model for ATM – the declaration marks the first step towards developing an integrated roadmap for the implementation of the new service delivery model; developing and achieving an agreement within the A6 regarding the future vision of the ATM sector and the future of the SESAR Programme after 2027; active involvement of the A6 in the consultation process of the new ATM Master Plan (2025 edition); and the improvement in relations and communication between the A6 and the European Commission (DG MOVE).

Representatives of the Agency were also actively involved in the work of the A6 Strategic Board, developing joint positions of the A6 Alliance and representing the A6 Alliance at high-level meetings. Thus, PANSA had a direct impact on shaping decisions associated with the development of the air traffic management industry in Europe.



In 2024, PANSA continued its involvement in information sharing and on-going work within the Baltic FAB (Baltic Functional Airspace Block), which Poland forms with Lithuania, and on the InterFAB forum, which is a platform for the exchange of experience between all European functional airspace blocks.



In 2024, PANSA continued its cooperation with other ANSPs within the CANSO structures with the aim to develop a common positions of ANSPs towards the most important topics and challenges faced by the ATM community, e.g. proposed solutions regarding:

- legislation (the SESII+ legislative package),
- operations,
- infrastructure, associated with the development of the ATM Master Plan (2025 edition).

2025 marks the first year in the fourth reference period (RP4) – the regulatory perspective within the European Union’s performance scheme for air navigation services – covering the years 2025-2029.

In 2025, the Agency will implement actions aimed at achieving the performance targets assigned to its scope of responsibility as defined in the applicable PP RP4.

The Agency will ensure safety of air operations conducted in FIR Warsaw regardless of the operational situation. Accordingly, the planned PP RP4 actions will be carried out to develop the processes and tools that enhance safety management effectiveness.

Continuity of air traffic control services will be maintained across all services, i.e. ACC, APP, TWR and FIS, while actions will be taken to effectively manage the operations personnel.

In the technical and operational area, the proprietary ATM support tools, including the CAT, Traffic and PANDORA, will be developed alongside with the development of the ATM system (upgrade of the system P_21) and work towards the target implementation of the iTEC/SkyNex (iSNEX) system.

Environmental benefits will be achieved, among others, through enabling a greater efficiency of en-route flights by improving Free Route Airspace (FRA), including cross-border FRA in cooperation with further neighbouring ANSPs and through development of tools for automatic exchange of information on activities in military zones and ASM support systems.

The Agency will continue its reasonable financial economy, striving to achieve the set cost-efficiency targets while maintaining continuity of air navigation services provision, and fulfilling other tasks assigned to the Agency, while taking into account PANSA’s development in the medium and long-term perspective.

The Agency's involvement in the European SESAR programme will be continued, both in the area of R&D and implementation. Should opportunities arise for co-financing projects in line with SESAR, PANSA will apply for national and EU funds to support such projects, following resource availability and analysis.





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 2024, item 1272), hereinafter referred to as "PANSA Act"), prepares financial statement for statutory purposes in accordance with IFRS as approved by the EU.

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 independent 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.

Pursuant to the PANSA Act, 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 statutory 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 revenue are among others:

- revenues from services provided,
- interest on bank deposits,
- grants and donations,
- 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.^[17] 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 for charges for navigation services established annually.

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

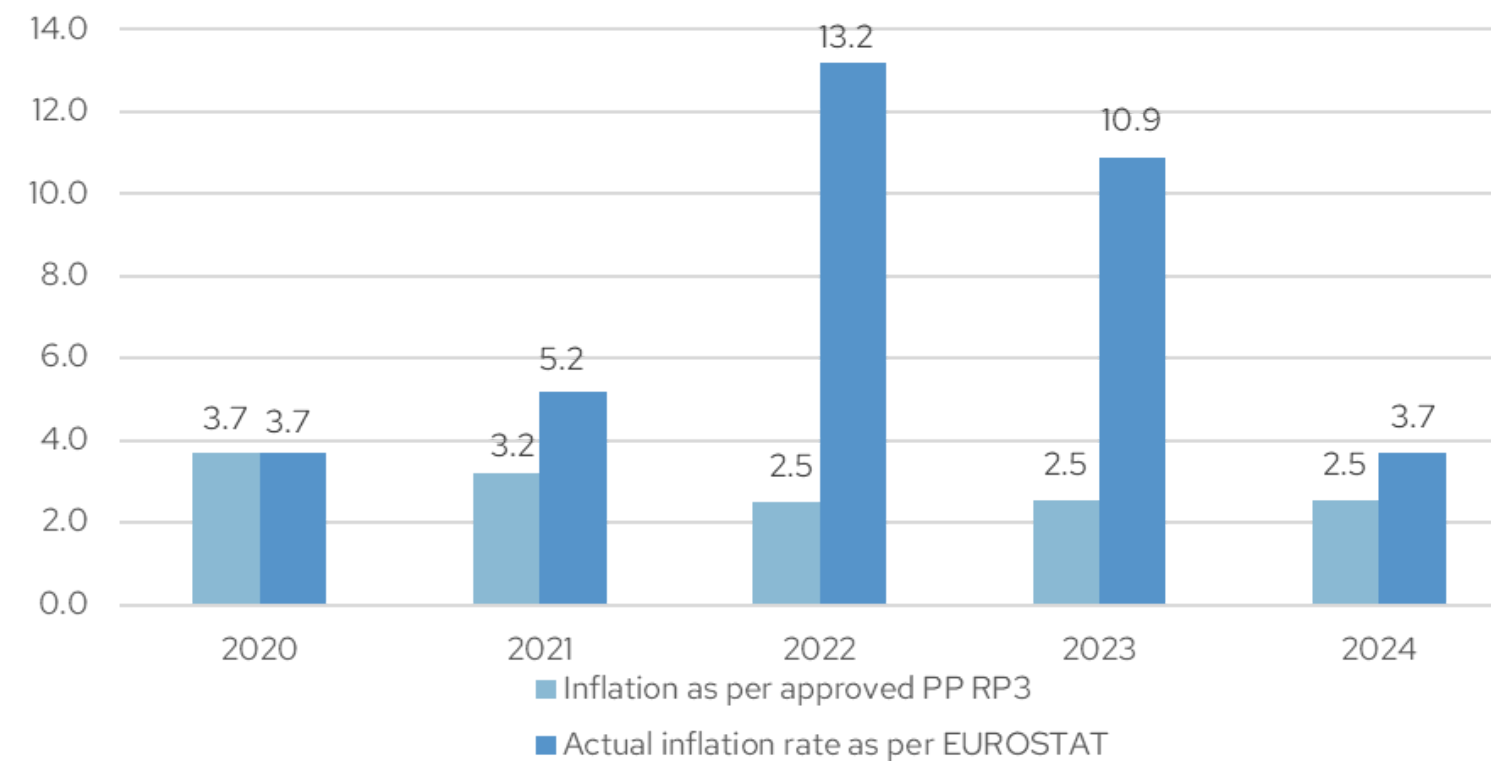
- actual number of service units:
 - for en-route services (SU), which derive from the weight of the aircraft, number of movements and the length of the route of the flight over the territory of Poland,
 - for terminal services (SU-L), which derive from the weight of the aircraft and the number of landing approaches at 'controlled' Polish airports;
- unit rates of en-route and terminal charges,
- value of carry-overs reflected in the calculation of the unit rates under applicable law.

[17] Commission Implementing Regulation (EU) 2019/317 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



In the period 2020-2024, the economy experienced significant price fluctuations as a result of the war in Ukraine, which drove inflation to its highest level in 2022, followed by a significant decline at the end of 2024. In 2021-2024 the level of actual inflation was higher than assumed in the RP3 PP. The higher actual inflation had an impact on PANSÀs incurred costs.

Fig. 17 Forecasted vs actual inflation rates (%)



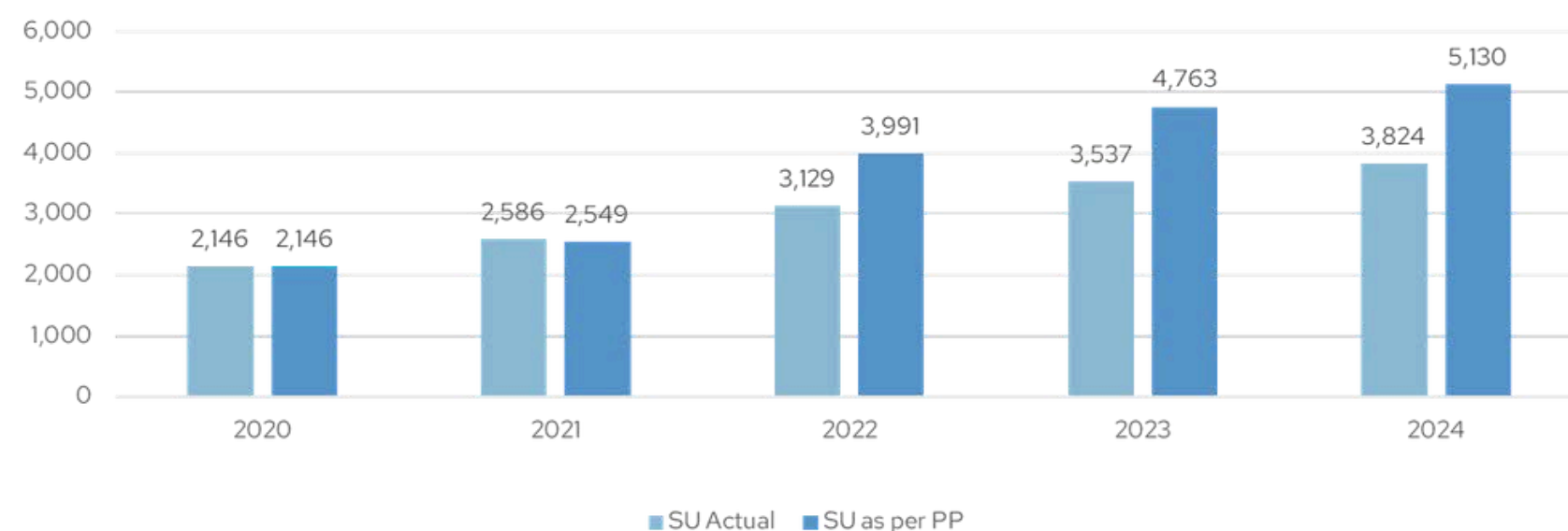
Source: Own elaboration based for forecasted values on IMF "World Economic Outlook Database" (April 2021) and for actual values on Eurostat (April 2025)



The geopolitical situation was the most important factor which had an impact on the rate of traffic recovery in the Polish airspace. The military activity and sanctions introduced, resulting in significant changes in the traffic flows in the European airspace, led to essential drop in the level of transit overflights in FIR EPWW. As a consequence the level of actual en-route service units in 2024 was lower by 25.5% than assumed in the RP3 PP.

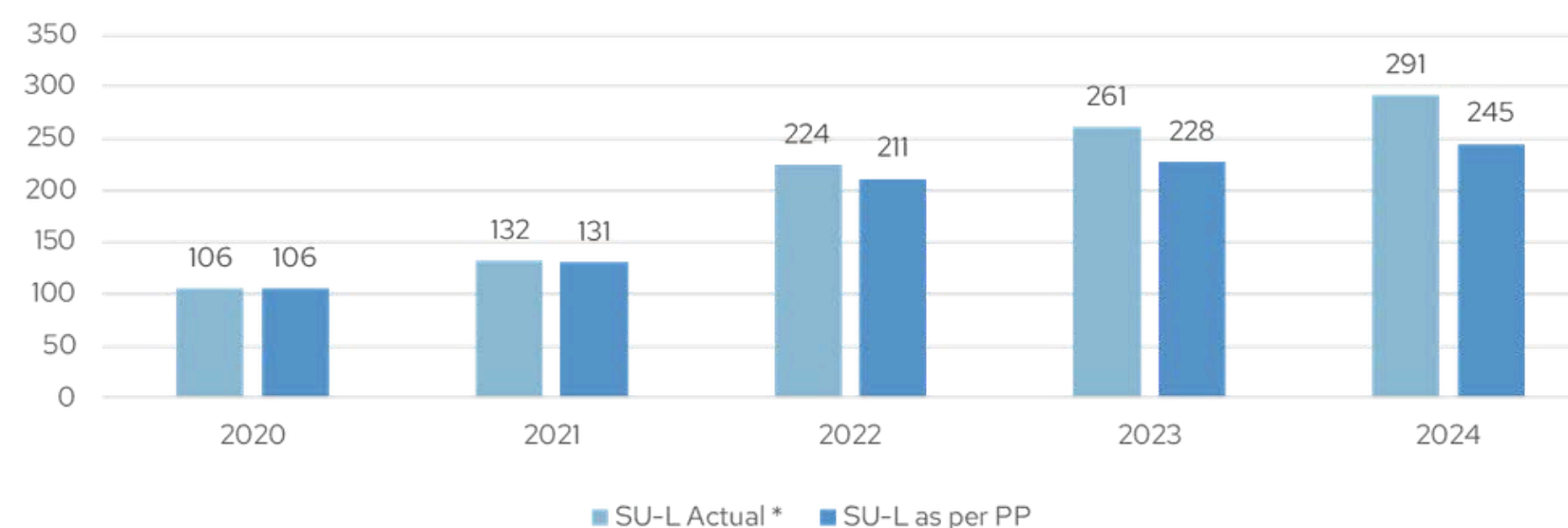
At the same time in 2024 the dynamic terminal traffic growth at Polish airports was observed. The restoration of terminal traffic was much faster and it was by 18.9% higher than adopted in RP3 PP.

Fig. 18 En-route service units – SU ('000)



Source: Own elaboration

Fig. 19 Terminal service units – SU-L ('000)



Source: Own elaboration, actual terminal service units do not include the service units handled by other entities

For the provision of navigation services, PANSa calculates and collects the following charges:

- en-route charges – invoiced and collected on behalf of PANSa by EUROCONTROL CRCO, based on unit rate approved by the EUROCONTROL enlarged Commission,
- terminal charges – invoiced and collected by PANSa, based on unit rates approved by the President of the Civil Aviation Authority. In RP3 terminal unit rates are established for two separate terminal charging zones, approved in 2019 by a decision of Minister of Infrastructure – one for Warsaw Chopin airport and the second one for 14 regional airports where PANSa provides air traffic services.

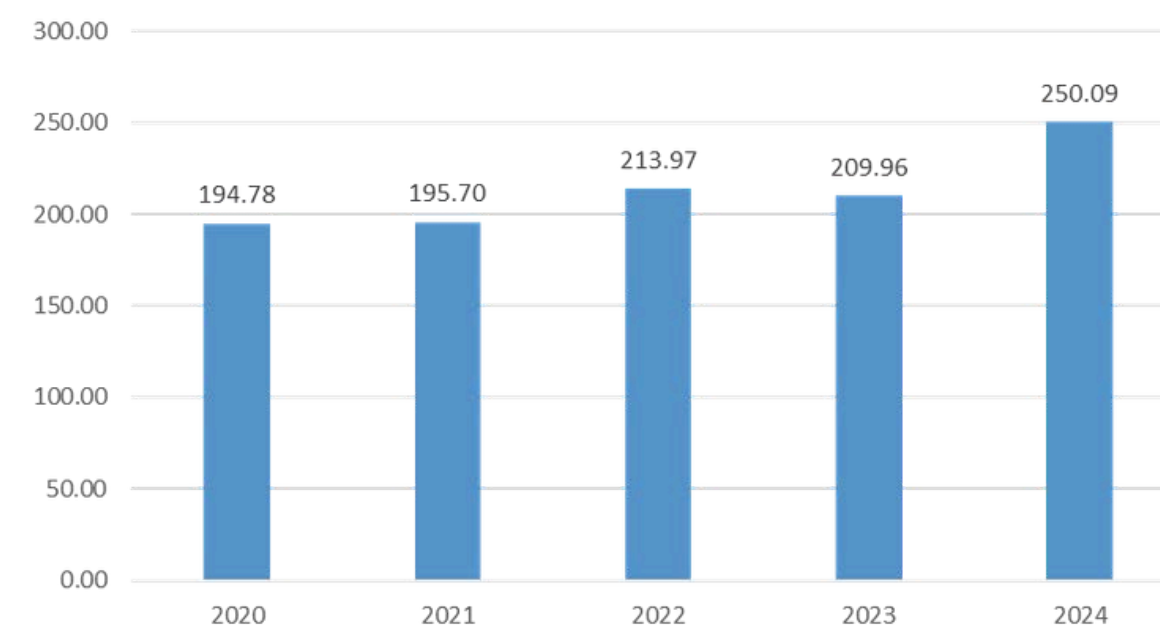
The unit rates of air navigation charges are calculated using three elements:

- determined costs of providing air navigation services in the given charging zone for the given year, as established in the Performance Plan for Poland (total of costs of all entities covered by the plan),
- adjustments stemming from EU Charging Scheme, subject to settlement in the given year,
- forecasted number of service units in the given charging zone for the given year, as forecasted in the Performance Plan for Poland.

The Unit rates applicable in Poland in 2024 were the following:

- en-route unit rate: PLN 250.09,
- terminal unit rate:
 - charging zone 1 (Warsaw Chopin airport): PLN 627.67,
 - charging zone 2 (other airports): PLN 1,262.35.

Fig. 20 En-route charges unit rates in Poland (PLN)

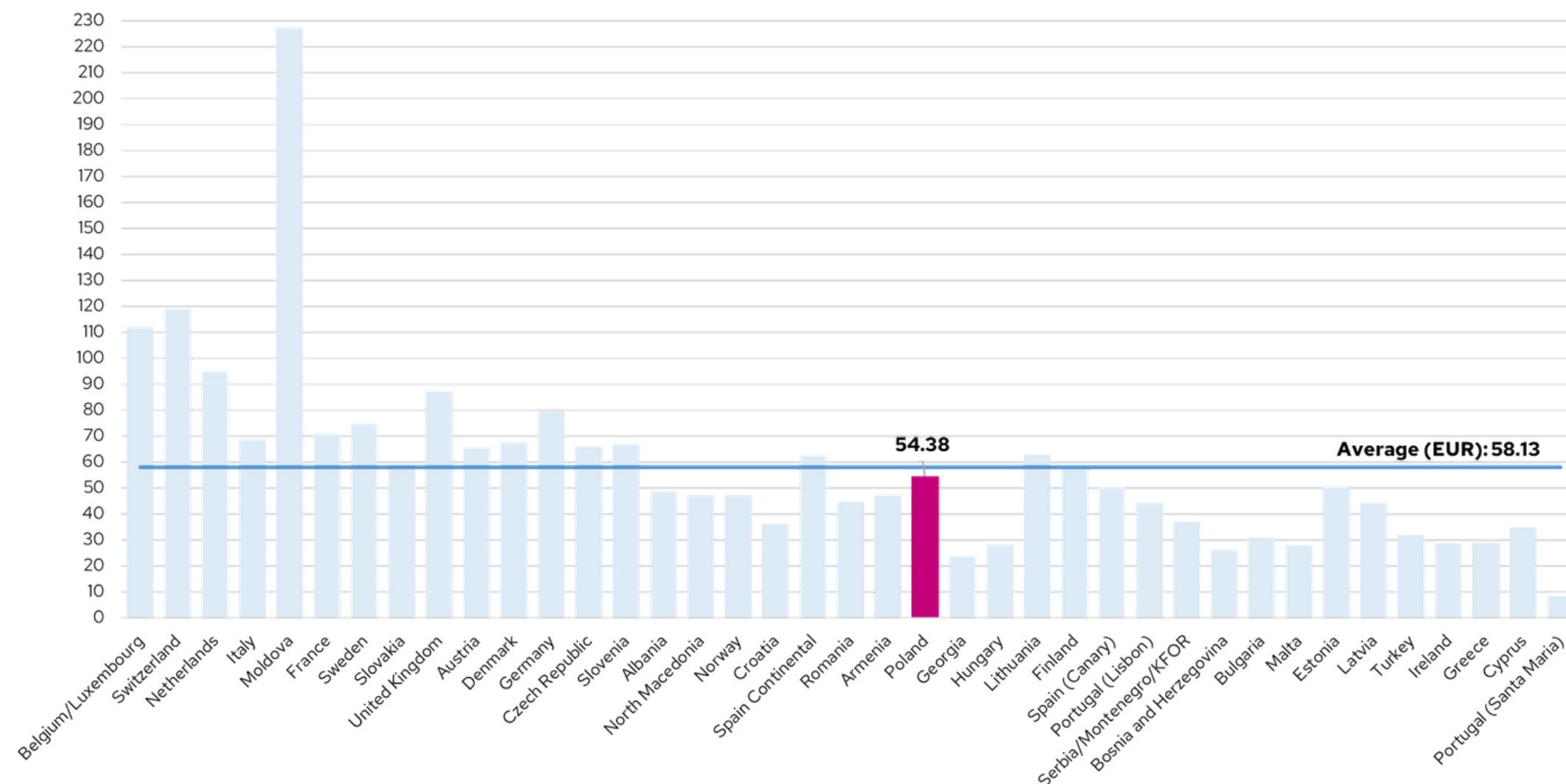


Source: Own elaboration, presented unit rates do not include the EUROCONTROL administrative unit rate



The average value of the en-route unit rate in 2024 in EUROCONTROL Member States was EUR 58.18. The Polish unit rate for en-route navigation services was **EUR 54.38**.

Fig. 21 En-route unit rate in EUROCONTROL Member States in EUR



Source: Own elaboration based on Decision No 23/176 of the EUROCONTROL enlarged Commission dated November, 28th 2023, presented unit rates do not include the EUROCONTROL administrative unit rate at the level of EUR 0.11.

Fig. 22 Terminal charges unit rates in Poland (PLN)



Source: Own elaboration



Tab. 12 Report on PANSA's financial activities

Statement of comprehensive income ('000 PLN)	For the year ended 31.12.2024	For the year ended 31.12.2023
Sales revenues	1,230,069	1,219,990
Operating expenses	1,331,609	1,190,329
Profit on sales	-101,540	29,661
Other operating revenues	55,891	48,211
including: EU grants and donations from the state budget	41,579	39,721
Other operating expenses	29,993	36,749
Operating profit	-75,642	41,123
Financial revenues	15,849	68,761
Financial expenses	35,781	46,747
Gross profit	-95,574	63,137
Income tax expense	31,045	41,731
Net profit	-126,619	21,406
Items of other comprehensive income	-2,348	1,480
Total comprehensive income	-128,967	22,886

Source: Own elaboration



Tab. 13 Sales revenues

Przychody ze sprzedaży ('000 PLN)	For the year ended 31.12.2024	For the year ended 31.12.2023
Navigation services, including:	1,220,126	1,209,989
• En-route navigation, including:	953,425	950,274
◦ Balance of adjustments for carry-overs	9,133	224,673
• Terminal navigation, including:	232,052	227,494
◦ Balance of adjustments for carry-overs	-53,959	-13,002
• Grant for exempted flights	34,649	32,221
Non-navigation services, including:	9,916	9,960
• Measurement of meteorological parameters	1,771	1,771
• Radar data	3,210	3,185
Sales of materials	27	41
Total	1,230,069	1,219,990

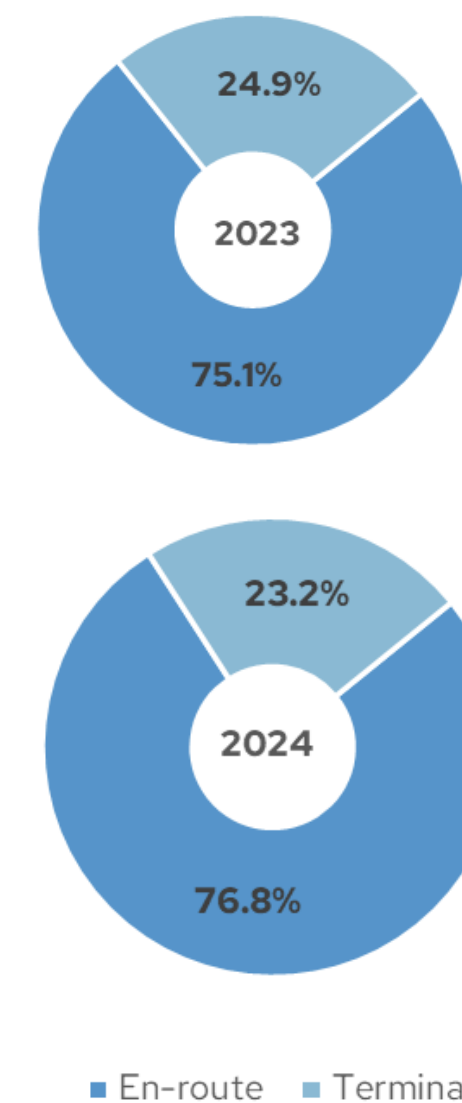
Source: Own elaboration

The analysis of the PANSA's revenue structure shows that the dominant share in total revenues is sales revenue, which in 2024 amounted to **kPLN 1,230,069**.

Taking into account sales revenue structure, its highest part is sales revenue of navigation services accounted for 94% of the total income reported by the Agency.

Also, the balance of adjustments for carry-overs in the total amount of kPLN -44,827 significantly affects the Agency's recognized revenue.

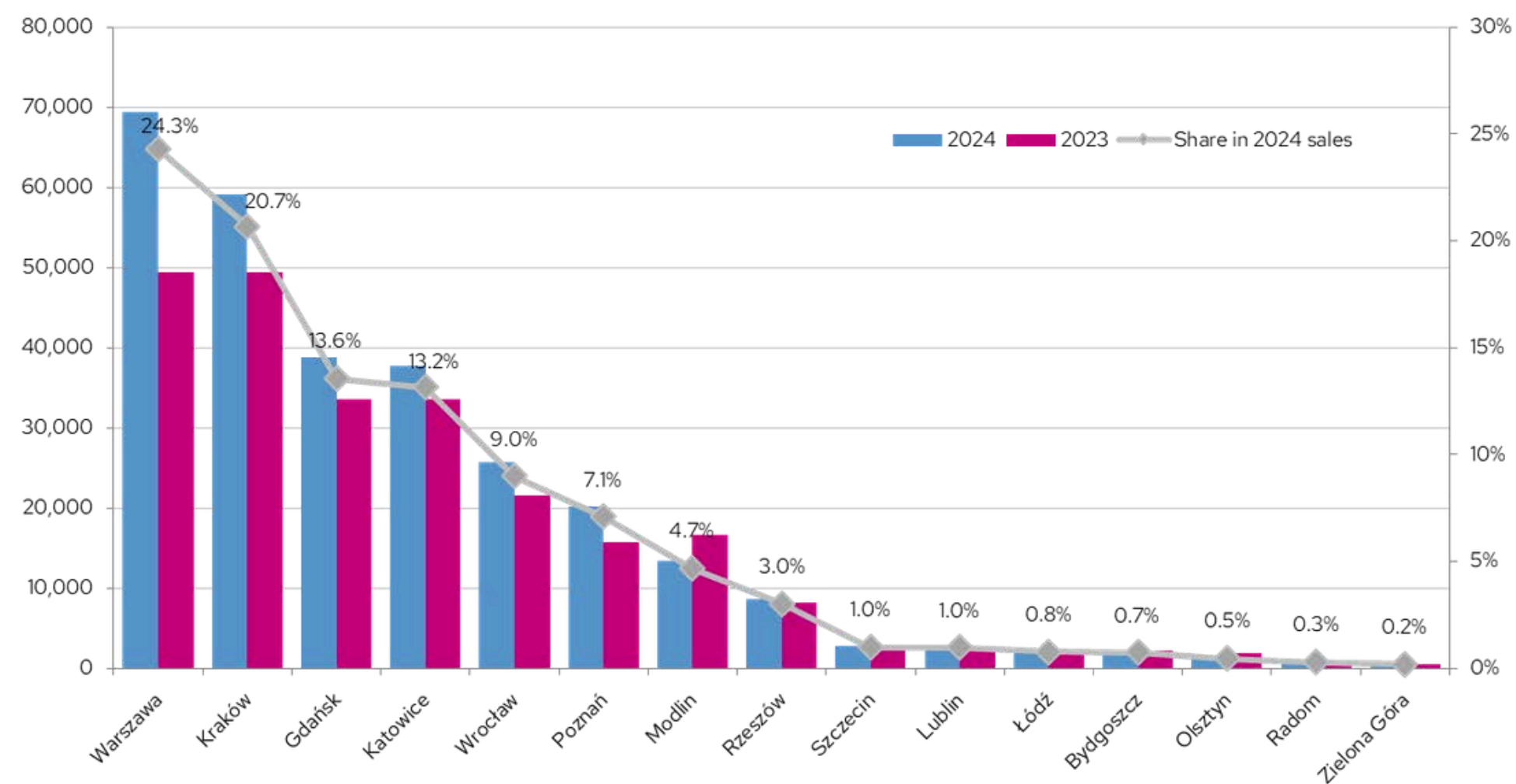
Fig. 23 Invoiced sales revenues by services



Source: Own elaboration



Fig. 24 Terminal invoiced sales revenues by airport



Source: Own elaboration



The total costs incurred by PANSA in 2024 amounted to **kPLN 1,397,383**.

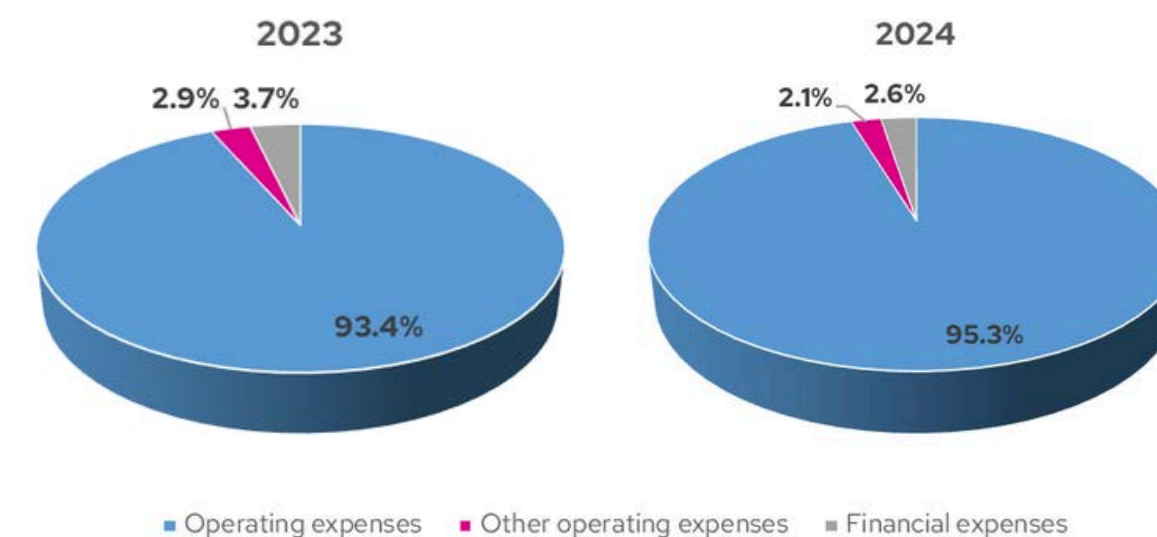
The analysis of the PANSA cost structure shows that the significant share in total costs corresponds to the operating expenses, which in 2024 amounted to kPLN 1,331,609 (**95% of total costs**).

Tab. 14 Total costs

Total costs ('000 PLN)	For the year ended 31.12.2024	For the year ended 31.12.2023
Operating expenses	1,331,609	1,190,329
Other operating expenses	29,993	36,749
Financial expenses	35,781	46,747
Total costs	1,397,383	1,273,825

Source: Own elaboration

Fig. 25 Total costs



Source: Own elaboration

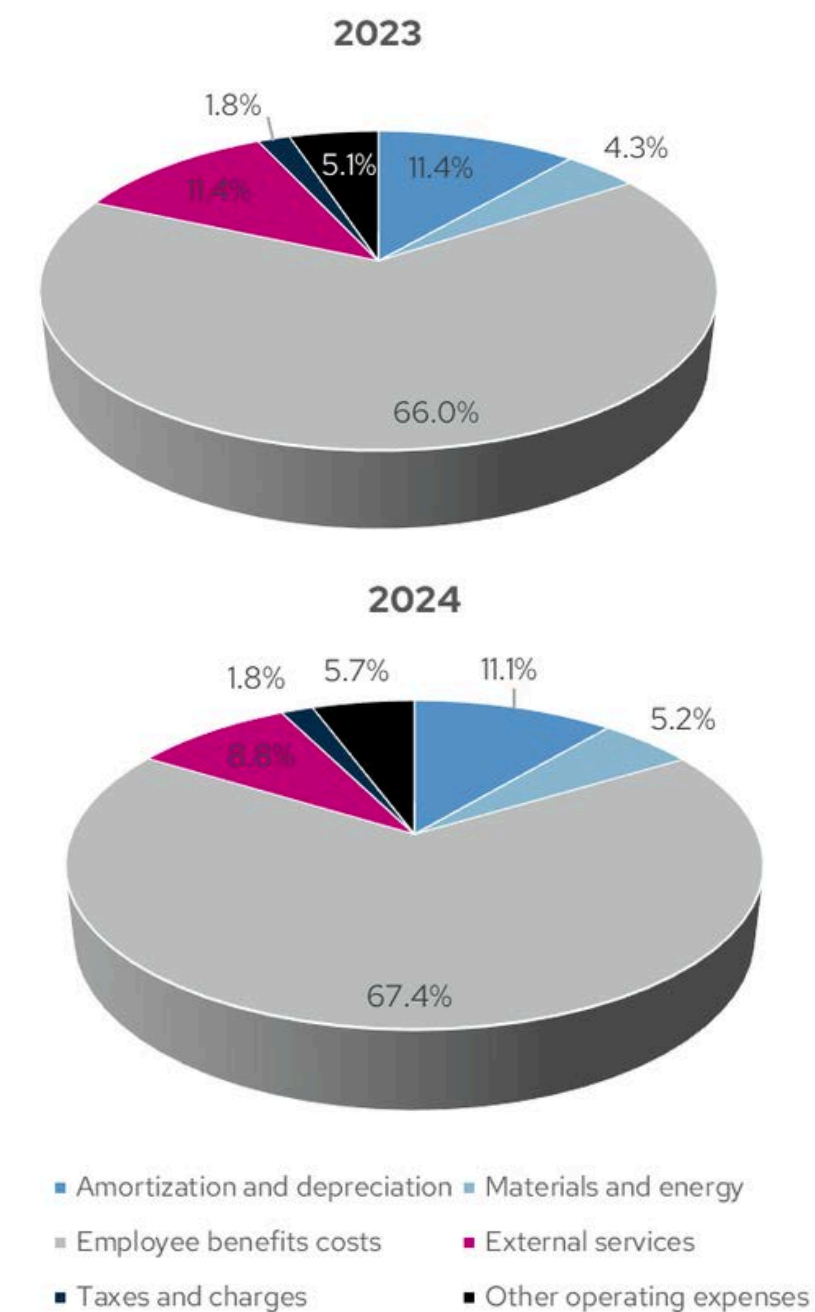


Tab. 15 Operating expenses by type

Operating expenses by type ('000 PLN)	For the year ended 31.12.2024	For the year ended 31.12.2023
Amortization and depreciation	148,220	135,299
Materials and energy	69,854	50,811
Employee benefits costs	897,329	785,572
External services	117,038	136,128
Taxes and charges	23,651	21,867
Other operating expenses	75,518	60,652
Total of cost by kind	1,331,609	1,190,329

Source: Own elaboration

Fig. 26 Operating expenses by type



Source: Own elaboration

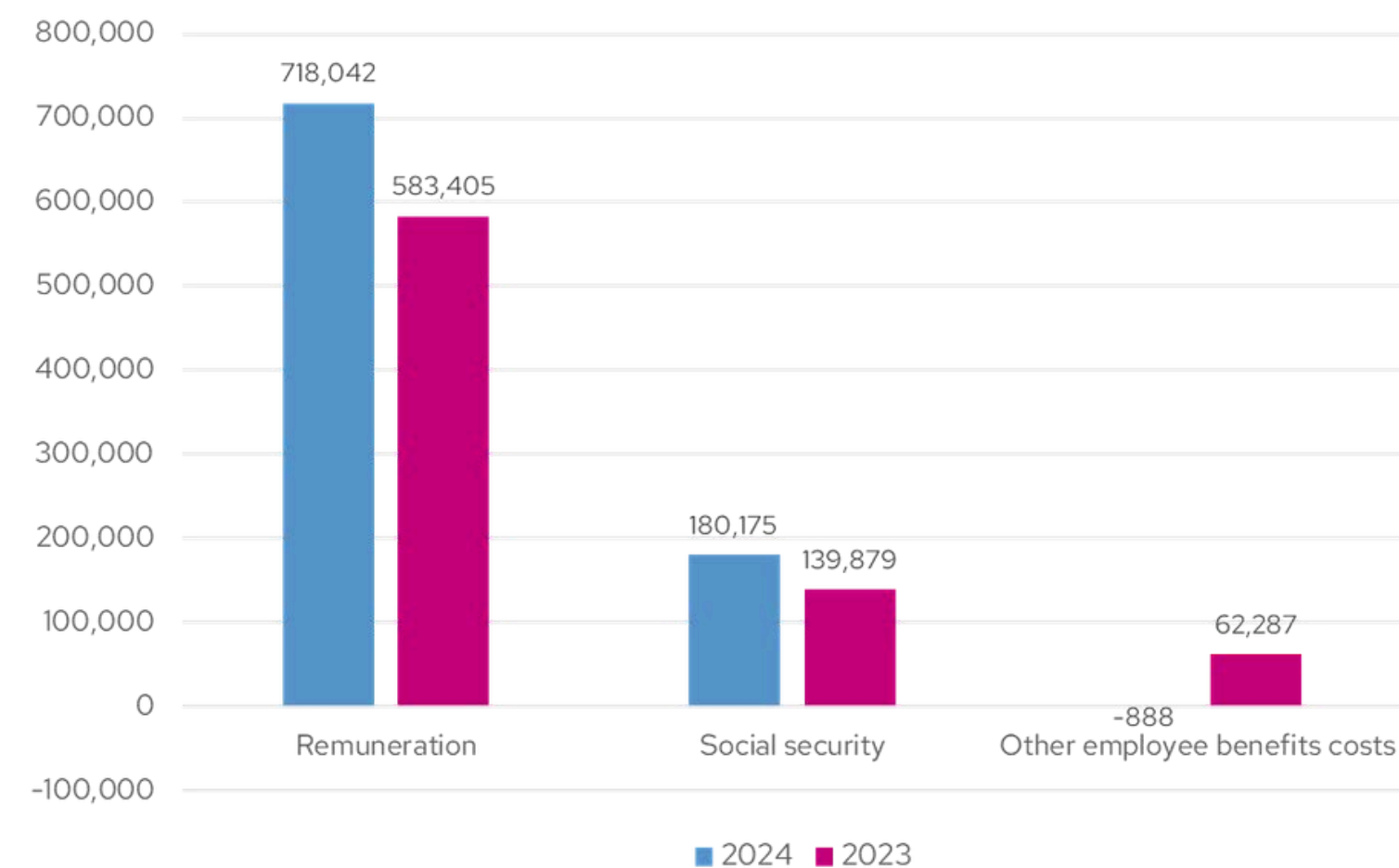


Tab. 16 Employee benefits costs

Employee benefits costs ('000 PLN)	For the year ended 31.12.2024	For the year ended 31.12.2023
Remuneration	718,042	583,405
Social security	180,175	139,879
Other employee benefits costs	-888	62,287
Employee benefits costs	897,329	785,572

Source: Own elaboration

Fig. 27 Employee benefits costs



Source: Own elaboration



In compliance with the Commission Implementing Regulation (EU) 2019/317, the costs of providing air navigation services are broken down into:

- staff,
- other operating costs,
- depreciation,
- cost of capital,
- exceptional items.

The employee benefits 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, operating expenses, training in employee costs, other operating expenses and eligible financial expenses. Lease payments resulting from the application of IFRS 16 are also presented in other operating costs. The portion of depreciation resulting from the application of IFRS 16 is not presented under depreciation. The cost of capital is not calculated on assets recognized due to the application of IFRS 16.

Tab. 17 Operating expenses by service

Specification according to the Regulation 2019/317	Constituent items	En-route navigation ('000 PLN)	Terminal navigation ('000 PLN)
Staff	Total, including:	696,736	183,068
	• Operating expenses	694,764	182,550
	• Other operating expenses	1,971	517
Other operating costs	Total, including:	168,708	46,707
	• Operating expenses	164,629	44,773
	• Other operating and financial expenses	4,923	2,214
	• Other operating and financial revenues	-845	-280
Depreciation		106,356	22,164
Cost of capital		66,000	12,736
Exceptional items			
Total costs		1,037,800	264,675

Source: Own elaboration



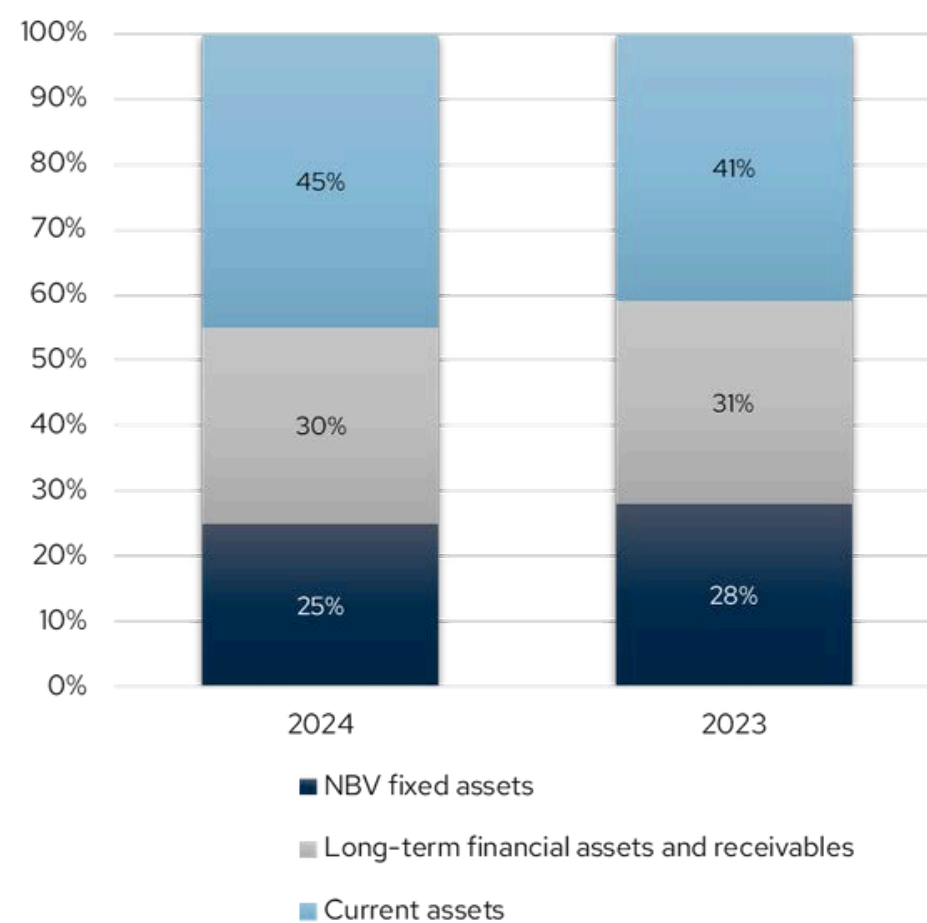
Tab. 18 Statement of financial position

Statement of financial position as at Assets (` 000 PLN)	31.12.2024	31.12.2023
Non-current assets	2,204,379	2,134,580
Intangible fixed assets	354,648	304,047
Property, plant and equipment	1,048,489	960,123
Right-of-use assets IFRS 16	52,758	49,733
Long-term receivables	235	146
Long-term assets due to adjustments for carry-overs	732,936	811,155
Other accruals	15,313	9,376
Current assets	958,389	941,490
Inventories	65	158
Trade and other receivables	247,571	197,949
Short-term assets due to adjustments for carry-overs	506,322	414,465
Short-term accruals	53,853	17,580
Cash and cash equivalents	150,577	311,337
Assets available-for-sale	0	0
Total Assets	3,162,767	3,076,070
Statement of financial position as at Liabilities (` 000 PLN)	31.12.2024	31.12.2023
Equity	1,328,208	1,457,175
Statutory Fund	475,022	475,022
Reserve Fund	971,063	948,177
Retained earnings	0	0
Accumulated other comprehensive income	8,742	12,570
Profit (loss) for the financial year	-126,619	21,406
Long-term liabilities	1,142,255	1,171,185
Long-term provisions	259,550	290,806
Deferred tax liability	110,319	79,824
Other long-term accruals	211,770	297,782
Long-term liabilities due to adjustments for carry-overs	106,179	90,292
Liabilities due to IFRS 16	46,873	43,749
Liabilities due to loan	406,717	367,887
Other long-term liabilities	847	846
Short-term liabilities	692,305	447,711
Short-term provisions	1,367	12,141
Trade and other liabilities	390,443	195,754
Short-term liabilities due to adjustments for carry-overs	85,772	51,317
Liabilities due to IFRS 16	10,312	9,798
Liabilities due to loan	89,122	91,793
Other short-term accruals	115,290	86,908
Total Liabilities	3,162,767	3,076,070

Source: Own elaboration

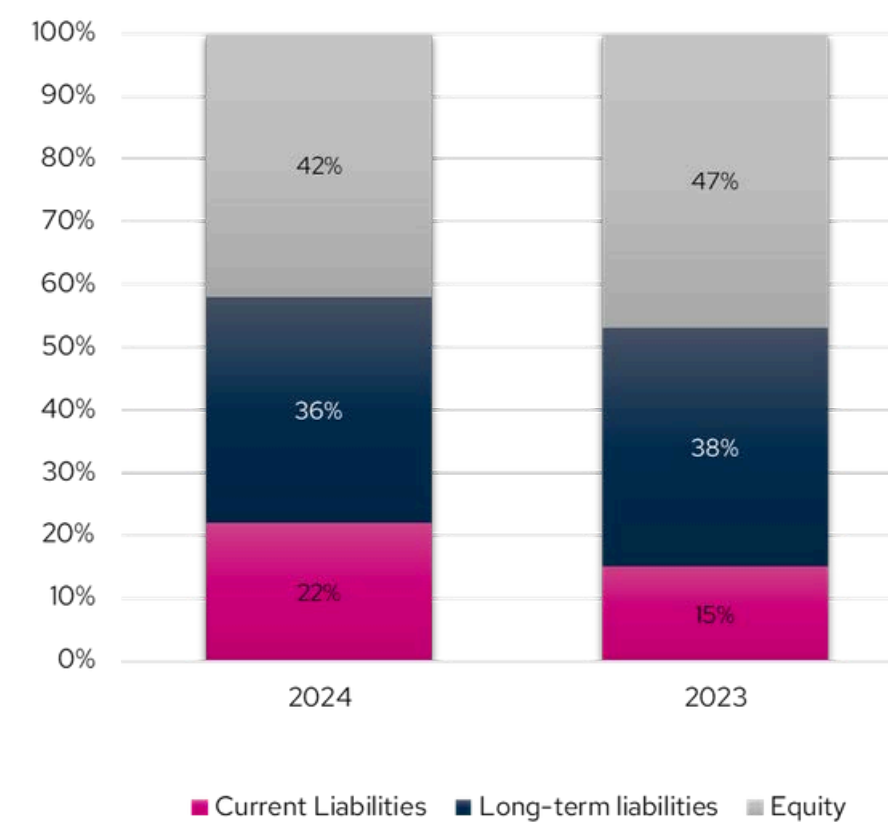
The total value of assets/liabilities increased by **kPLN 86,697** to **kPLN 3,162,767** at the end of 2024. The graphs below present the PANSA's balance sheet structure changes in the years 2023 and 2024.

Fig. 28 Assets



Source: Own elaboration

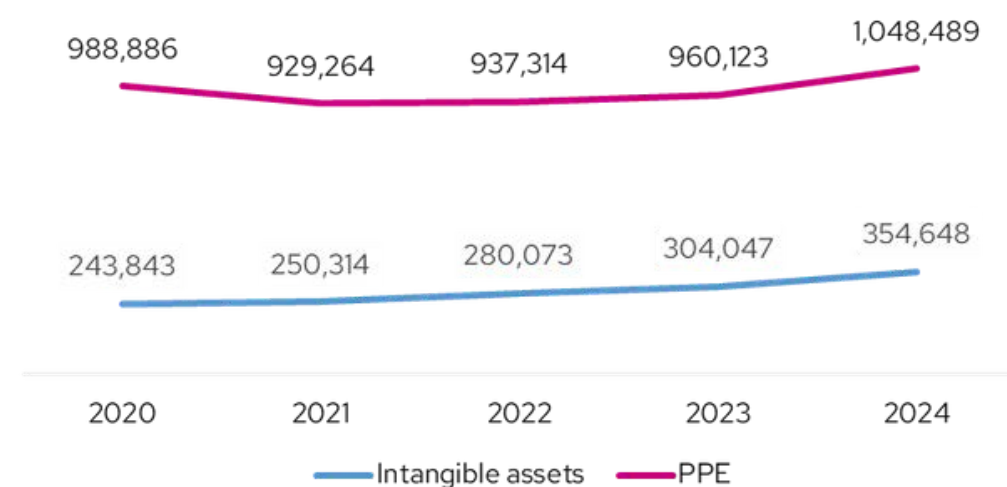
Fig. 29 Liabilities



Source: Own elaboration

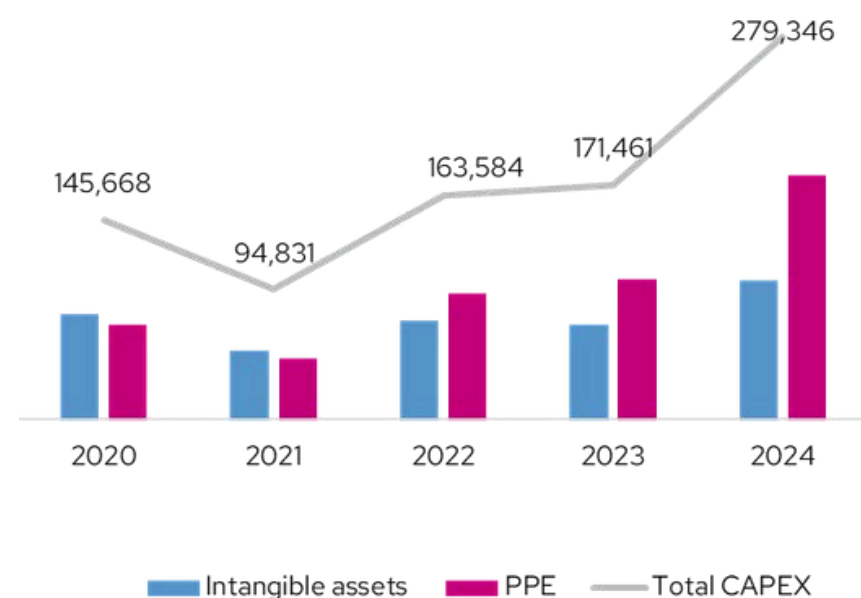
Property, plant and equipment comprise assets owned by the Polish Air Navigation Services Agency. At the end of 2024, the Agency had at its disposal tangible fixed assets (PPE) in the total amount of kPLN 1,048,489 which consisted mainly of technical equipment and machinery, buildings and structures, land (including rights of perpetual usufruct of land), and tangible fixed assets under construction.

Fig. 30 PPE & Intangible assets



Source: Own elaboration

Fig. 31 CAPEX ('000 PLN)



Source: Own elaboration

Tab. 19 Property, plant and equipment

Property, plant and equipment ('000 PLN)	Net value as at 31.12.2024	Net value as at 31.12.2023
Land & Perpetual usufruct of land	145,962	145,208
Buildings and structures	318,929	325,585
Machinery and equipment	374,222	357,232
Fixed assets under constructions	161,793	98,938
Vehicles, other non-current assets	47,583	33,159
Total	1,048,489	960,123

Source: Own elaboration

At the end of 2024 the Agency's funds (equity) amounting to **kPLN 1,328,208** represent 42,0% of total liabilities. The remaining 58,0% are long-term and short-term liabilities in the total amount of **kPLN 1,834,560**.

Tab. 20 Statement of changes in equity

Statement of changes in equity ('000 PLN)	Statutory fund	Reserve fund	Retained earnings	Profit for the financial year	Accumulated other comprehensive income	Total
As for 31 December 2023	475,022	948,177	0	21,406	12,570	1,457,175
Distribution of prior year profit	0	21 406	0	-21,406	0	0
Profit for the financial year	0	0	0	-126,619	0	-126,619
Retained earnings	0	1 480	0	0	-1,480	0
Actuarial profit (loss)	0	0	0	0	-2,348	-2,348
As for 31 December 2024	475,022	971,063	0	-126,619	8,742	1,328,208

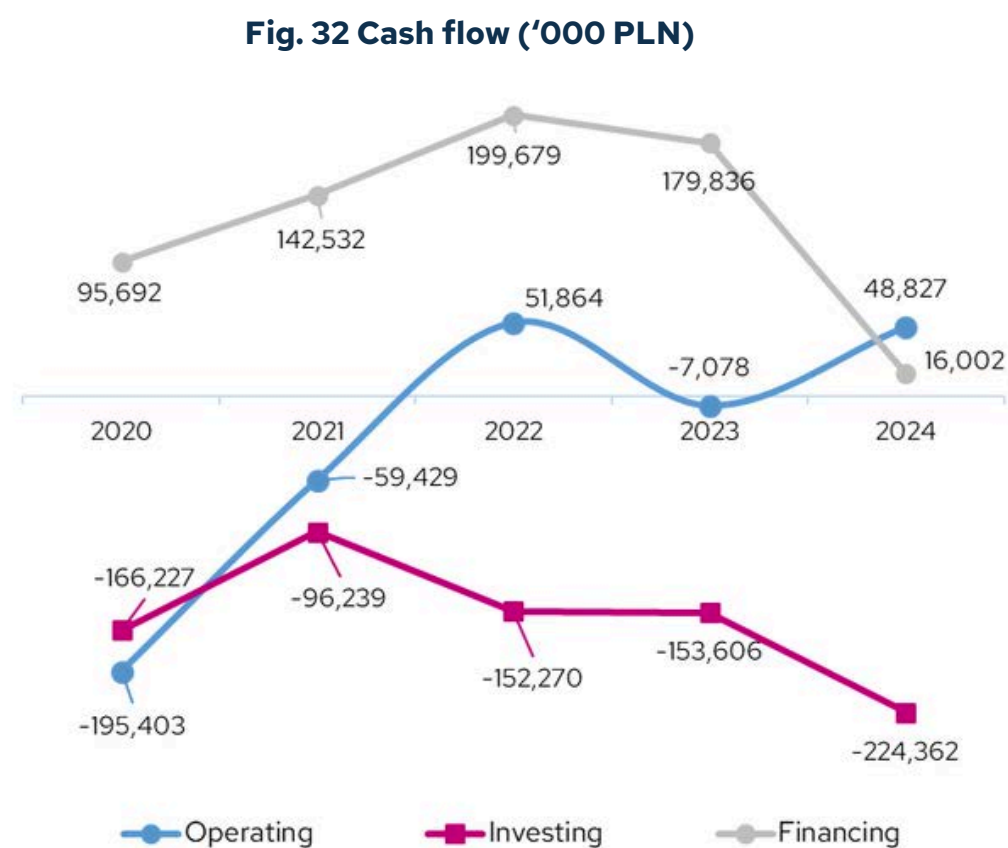
Source: Own elaboration



The net cash flow from PANSA's operating activities for 2024 amounted to **kPLN 48,827**.

The net cash flow from PANSA's investment activities for 2024 was negative and amounted to **kPLN 224,362**. The negative cash flow in this area provides that PANSA continued its activities aimed at modernising the Agency through digitalisation as well as development in the area of new technologies.

The net cash flow from financing activities in 2024 was positive and amounted to **kPLN 16,002**.



Source: Own elaboration

Tab. 21 Cash flows

Statement of cash flows (`000 PLN)	For the year ended 31.12.2024	For the year ended 31.12.2023
Profit before tax	-95,574	63,137
Total adjustments	144,401	-70,215
Depreciation	148,220	135,299
Foreign exchange profit (loss)	1,226	10,373
Interest	21,036	23,378
Profit (loss) on investments	5,128	1,291
Change in provisions	-42,581	148,005
Change in inventories	93	-47
Change in receivables	-49,711	-34,977
Change in liabilities	140,389	41,229
Change in accruals	-71,513	-91,595
Change in adjustments for carry-overs	36,704	-264,143
Income tax (paid)	0	0
Other adjustments	-44,590	-39,028
Net cash flows from operating activities	48,827	-7,078
Disposal of tangible and intangible assets	40	552
Acquisition of tangible and intangible assets	-223,285	-136,193
Development works	-1,117	-17,964
Net cash flows from investments	-224,362	-153,606
Credits and loans	134,206	228,627
Interest received	5,971	6,810
Proceeds from grants	13,188	74,930
Repayment of credits and loans	-94,760	-93,976
Interest paid	-32,179	-27,663
Interests IFRS 16	-2,729	-2,577
Change in liabilities due to IFRS 16	-5,666	-6,314
Return of grants	-2,030	0
Net cash from financing activities	16,002	179,836
Net increases/decreases in cash and cash equivalents	-159,534	19,153
Change in cash due to exchange rates changes	-1,226	-10,373
Balance sheet change in cash and cash equivalents	-160,760	8,779
Cash and cash equivalents, at the beginning of the period	311,337	302,558
Cash and cash equivalents, at the end of the period, including:	150,577	311,337
• restricted cash	24,409	29,634

Source: Own elaboration



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