Performance Plan

Poland

Third Reference Period (2020-2024)

Status: Final performance plan revised during the reference period (Art. 16 of IR 2019/317)

Date of issue: 6 May 2022

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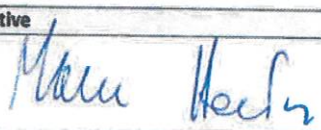
Signatories

Performance plan details	
State name	Poland
Status of the Performance Plan	Final performance plan revised during the reference period (Art. 16 of IR 2019/317)
Date of issue	
Date of adoption of Draft Performance Plan	
Date of adoption of Final Performance Plan	6 May 2022

We hereby confirm that the present performance plan is consistent with the scope of Regulation (EU) No 2019/317 pursuant to Article 1 of Regulation (EU) No 2019/317 and Article 7 of Regulation (EC) No 549/2004.

Name, title and signature of representative	
On behalf of the Minister of Infrastructure - Secretary of State Marcin HORAŁA	
Director General of Civil Aviation of the Republic of Poland Piotr SAMSON	

Additional comments	

Document change record		
Version	Date	Reason for change
1.	30 September 2021	Draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 12 of IR)
2.	16 November 2021	Updated Draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 12 of IR)
3.	06 May 2022	Performance plan containing revised RP3 targets.

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SECTION 1: INTRODUCTION

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1 - INTRODUCTION

1.1 - The situation

NSA(s) responsible for drawing up the Performance Plan	Polish Civil Aviation Authority acting as NSA

1.1.1 - List of ANSPs and geographical coverage and services

Number of ANSPs	5

ANSP name	Services	Geographical scope
Polish Air Navigation Services Agency (PANSA)	ANSP (ATS,CNS, AIS, SAR coordination)	Flight Infromation Region Warszawa, all airports concerned
Institute of Meteorology and Water Management - National Research Institute (IMWM)	METEO	Flight Infromation Region Warszawa (excluding EPRA TMA and CTR/ATZ, EPSY TMA and CTR/ATZ, EPBY TMA and CTR/ATZ)
Radom Meteo sp. z o.o.	METEO	EPRA TMA and CTR
Warmia i Mazury sp. z o.o.	ATS (AFIS), CNS (COM), METEO	EPSY METEO: TMA, CTR and ATZ, AFIS: ATZ
Port Lotniczy Bydgoszcz S.A.	ATS (AFIS), METEO	EPBY METEO: TMA, CTR and ATZ, AFIS: ATZ

Cross-border arrangements for the provision of ANS services

Number CB arrangements where ANSPs provide services in an other State	1

ANSPs providing services in the FIR of another State	
ANSP Name	Description and scope of the cross-border arrangement
PANSA	In order to reduce the number of coordinations for traffic in AWY L867, a separate area named SOUTH OF DESEN has been established within the PRAHA FIR. This area can be delegated to WARSZAWA ACC and in such case WARSZAWA ACC is responsible for the provision of air traffic control and flight information services within this area. It is based on Letter of Agreement between ANS of the Czech Republic and PANSA and AIP POLAND ENR 2.1.2.

Number CB arrangements where ANSPs from another State provide services in the State	3

ANSPs established in another Member State providing services in one or more of the State's FIRs	
ANSP Name	Description and scope of the cross-border arrangement
LVF Group Air Navigation Services (ATCC Malmö)	In order to reduce the number of coordinations over the Baltic high sea, separate areas have been established, within the WARSZAWA FIR. This areas named MIDSEA and RÖNNE SOUTH can be delegated to ATCC MALMÖ and in such case ATCC MALMÖ is responsible for the provision of air traffic control and flight information services within this areas. It is based on Letter of Agreement between ATCC MALMÖ and ACC WARSZAWA and AIP POLAND ENR 2.1.2.
ANS of the Czech Republic (ACC Praha)	In order to reduce the number of coordinations, a separate area WEST of OKX has been established within the WARSZAWA FIR. This area may be delegated to PRAHA ACC and in such case PRAHA ACC is responsible for the provision of air traffic control and flight information services within this area. In order to reduce the number of coordinations for traffic in the AWY, a separate area SOUTH of KŁODZKO has been established within the WARSZAWA FIR. This area can be delegated to PRAHA ACC and in such a case PRAHA ACC is responsible for the provision of air traffic control and flight information services within this area. It is based on Letter of Agreement between ANS of the Czech Republic and PANSA and AIP POLAND ENR 2.1.2.
Austro Control GmbH via DFS Deutsche Flugsicherung GmbH	In order to reduce the number of coordinations for flights at Heringsdorf Airport (CTR), the area named CTR Heringsdorf can be delegated to ACC BREMEN and in such case ACC BREMEN is responsible for the provision of air traffic control and flight information services within this area. It is based on Letter of Agreement between ACC BREMEN and ACC WARSZAWA. DFS Deutsche Flugsicherung GmbH (ACC BREMEN) delegated provision of air traffic control and flight information services within this area (CTR Heringsdorf) to Austro Control GmbH as stated in AIP POLAND ENR 2.1.2.

1.1.2 - Other entities in the scope of the Performance and Charging Regulation as per Article 1(2) last para.

Number of other entities	2

Entity name	Domain of activity	Rationale for inclusion in the Performance Plan
Civil Aviation Authority of the Republic of Poland (NSA)	Supervision	Only the part of Polish CAA's budget attributable to activities on supervision of Air Navigation Service Providers related to NSA & partially MS obligations are included in the costs bases for air navigation charges. This is in line with Polish Aviation Act and EU Single European Sky Regulations.

EUROCONTROL	Other/Network	Part of EUROCONTROL budget attributable to Poland's cost base.

1.1.3 - Charging zones (see also 1.4-List of Airports)

En-route	Number of en-route charging zones	1

En-route charging zone 1	Poland

Terminal	Number of terminal charging zones	2

Terminal charging zone 1	Poland - EPWA
Terminal charging zone 2	Poland - Others

1.1.4 - Other general information relevant to the plan

Due to the crisis caused by COVID-19, Polish ANSPs were put in a difficult situation in 2020. It was caused both by a significantly lower level of air traffic and existing obligations to provide uninterrupted air navigation services. As a consequence, ANSPs faced problems in several areas of their functioning, including operational, staffing and economic.

In response to the COVID-19 pandemic ANSPs were taking measures aimed at mitigation of the negative impact of the crisis situation. As a consequence, ANSPs were operating in a limited configuration due to the significant decrease in air traffic volume. The duty hours of the operational and engineering staff were reduced respectively. Many of staff training and equipment maintenance plans were postponed due to the introduced physical distancing rules. Some facilities were put in a "sleep" mode due to the absence of operational need and staff availability.

Taking into consideration all above mentioned actions, the situation concerning individual KPI was diverse as indicated below:

KPA SAFETY: COVID-19 pandemic situation did not affect dramatically the safety level of the services provided by ANSPs. The ANSPs have successfully implemented a set of measures to achieve performance targets. Data indicate that safety has remained at a very high level.

KPA ENVIRONMENT: An improvement in the en-route horizontal flight efficiency indicator (KEA) was reported in 2020. In Poland the value of the KEA was achieved at the level of 1.67% with the planned target value of 1.85%. However, these positive results were caused by a significant reduction of the air traffic volume.

KPA CAPACITY: The year 2020 should be divided into two periods: before COVID, covering months from January to mid-March 2020, and the time of COVID pandemic in the remaining period of the year. During the first period some delays were noted, while during the second – a significant reduction in the number of operations was reported, which significantly improved the situation in this KPA. As a result, the delay at the end of the year in Poland was 0 minutes/flight with a target of 0.30 minutes/flight. Similarly, good results in terminal traffic delays were recorded. In case of Poland, the national target was 0.45 minutes/flight, while the actual result was 0.02 minutes flight.

KPA COST EFFICIENCY: In the area of cost-efficiency, both in terms of en-route and terminal charges, the initial 2020 targets for the COVID-19 pandemic reason have not been achieved. In the area of en-route charges, the total number of service units (TSU) decreased in 2020 compared to 2019 by 56.8%, i.e. from 4.971.806 in 2019 to 2.145.811 in 2020 with a nominal decrease in total ANSP's costs in 2020 by 3.1%, and in constant prices from 2017 by 5.3%. Similarly, in the area of terminal charges at EPWA airport, i.e. in the first zone of terminal charges, the number of TSUs decreased in 2020 compared to 2019 by 59.5%, i.e. from 107.857 in 2019 to 43.367 in 2020, with a nominal decrease total costs in this area in 2020 by 21.9%, and in constant prices from 2017 by 24.1%. On the other hand, in the area of terminal charges in the second zone, the number of TSUs decreased in 2020 compared to 2019 by 55.0%, i.e. from 138.516 in 2019 to 62.352 in 2020, with a nominal decrease in total costs in 2020 by 2.9%, and in constant 2017 prices by 5.3%.

As indicated in the latest STATFOR forecast (May 2021), achievement of air traffic volumes recorded before 2019 will be possible in the latest years of RP3, assuming that the range of COVID-19 remains low and passengers will regain confidence in use of air transport.

It will create the situation when the biggest challenge for next years of the RP3 is to provide navigation service to meet requirements of pre-COVID-19 air traffic level. For the description of the macroeconomic situation, see Annex R.

Relevant local circumstances with high significance for performance target setting and updated view on the impact of the COVID-19 crisis on the operational and financial situation of ANSPs covered in the performance plan

1) Geographical location, including PL being EU/NATO/NM border country

Being NATO/NM border State leads to lower traffic predictability (out-of-area traffic). It requires application of measures to mitigate greater volatility of unregulated civil and military traffic. It also necessitates use of customized solutions in the area of ATM and flow management, enabling smooth cooperation with third parties (Russia, Belarus, Ukraine).

Political tensions between some non-EU states, impacting fight trajectories – e.g. in South-Eastern part of Poland – being reflected in actual HFE/KEA indicator.

Being EU border state also makes Poland volatile to changes in traffic to/from outside of EU. In the period of COVID-19 pandemic the restrictions impacting long-haul/intercontinental traffic visibly impacted traffic and aircraft structure in FIR Warszawa. Past experience shows that EU/NM border states experience higher volatility in terms of traffic levels, what results in greater difficulty in traffic forecasting (possible lower reliability of forecasting, especially under the current crisis) – therefore PL should be prepared for serving traffic even above STATFOR high forecasts. Possible increase in traffic beyond 2024 as well as possible changes in fleet and traffic flows require continuation of investments increasing flexibility in capacity delivery, based on data exchange and reliability of CNS infrastructure in RP3. This include also investments related to new ATM system (iTEC). These investments require also increase in ATSEP personnel to implement and maintain them, as well as training.

Over the last years of RP2, PL supported the European Network by helping to relieve the most congested parts of the European airspace. Under the current circumstances it is unclear when pre-crisis traffic levels might return and whether such support might still be needed by end of RP3/beginning of RP4 (RP3 planning will also impact RP4 in terms of available resources and resulting capacity).

2) Macroeconomic factors, including labour market situation, combined with required employment of highly skilled specialists to support, among others, implementation of new, specialised solutions

Poland experiences constant significant increases in minimum wage, average salary and minimum hourly wage. This impacts staff costs and cost of external services mostly, but also CAPEX (changes to construction labour market). This relates also to 2020 and 2021 – and is expected to continue over the rest of RP3. Data supporting this observation can be provided to EC/PRB if needed.

This, combined with the second lowest unemployment rate among the EU States (vide Eurostat data for August/September 2020), leads to increased pressure on salaries and creates so called “employee-orientated” market.

To be able to implement modern solutions related to, among others, digitalisation and CNS infrastructure or ATM systems (maintenance and development, including implementation of new ATM system - iTEC), PANSA needs to employ highly-skilled staff. The labour market situation again puts pressure on salaries in this group of employees.

As a developing economy, Poland experiences higher changes in GDP than developed economies. There is unquestionable relationship between GDP growth and air traffic growth – therefore Poland needs to be prepared for again increased traffic when crisis and its consequences are over.

As not part of the Euro-zone, Polish entities experience financial risks related to exchange rates. The non-EUR currency and developing economy impacts risk-free rate and State risk, what should be duly reflected in cost of capital.

3) Preparations for new greenfield hub airport

Poland plans to open new, greenfield hub airport (Solidarity Transport Hub) in the RP4 perspective. This requires works to be undertaken already in RP3. Those include, among others, airspace restructuring processes (required to both support area control management and approach control, as well as redesign of TMAs around airports) and preparatory works for a number of investment projects (for infrastructure and systems related to ATM/ANS).

Additional comments
Not applicable.

1.2 - Traffic Forecasts

1.2.1 - En route

En route Charging zone 1	**Poland**
En route traffic forecast	Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	793	872	912	377	460,7	752,4	863,0	920,3	0,2%
IFR movements (yearly variation in %)		10,0%	4,7%	-58,7%	22,2%	63,3%	14,7%	6,6%	
En route service units (thousands)	4 291	4 666	4 972	2 146	2 549,3	3 991,0	4 763,0	5 129,5	0,6%
En route service units (yearly variation in %)		8,8%	6,6%	-56,8%	18,8%	56,6%	19,3%	7,7%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
The plan was updated using the STATFOR OCTOBER 2021 forecast.

NOTE: Section 1.3 (Stakeholder Consultation) should include details on the consultation with airspace users' representatives and ANSPs concerned on the rationale for not using the STATFOR base forecasts.

1.2.2 - Terminal

Terminal Charging zone 1	**Poland - EPWA**
Terminal traffic forecast	Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	85,6	93,6	97,1	39,9	52,2	81,4	86,9	91,9	-1,1%
IFR movements (yearly variation in %)		9,4%	3,7%	-58,9%	30,7%	56,1%	6,7%	5,8%	
Terminal service units (thousands)	90,7	102,6	107,0	43,4	54,9	87,4	96,6	103,1	-0,7%
Terminal service units (yearly variation in %)		13,2%	4,3%	-59,4%	26,3%	59,2%	10,6%	6,7%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
The plan was updated using the STATFOR OCTOBER 2021 forecast.

NOTE: Section 1.3 (Stakeholder Consultation) should include details on the consultation with airspace users' representatives and ANSPs concerned on the rationale for not using the STATFOR base forecasts.

Terminal Charging zone 2	**Poland - Others**
Terminal traffic forecast	Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	106,6	119,5	124,2	57,2	69,5	111,9	118,4	127,4	0,5%
IFR movements (yearly variation in %)		12,1%	3,9%	-54,0%	21,5%	61,0%	5,8%	7,6%	
Terminal service units (thousands)	113,4	130,9	137,4	59,2	76,4	123,9	131,4	141,9	0,7%
Terminal service units (yearly variation in %)		15,4%	5,0%	-56,9%	29,0%	62,3%	6,0%	8,0%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
The plan was updated using the STATFOR OCTOBER 2021 forecast.

NOTE: Section 1.3 (Stakeholder Consultation) should include details on the consultation with airspace users' representatives and ANSPs concerned on the rationale for not using the STATFOR base forecasts.

1.3 - Stakeholder consultation

1.3.1 - Overall outcome of the consultation of stakeholders on the performance plan

Description of main points raised by stakeholders and explanation of how they were taken into account in developing the performance plan
During meetings held with stakeholders Polish NSA presented proposals of the changes to the Performance Plan developed in 2019, resulting from COVID-19 pandemic. Discussions were focused on Key Performance Areas including safety, environment, capacity and cost-efficiency, and additionally on the incentive scheme mechanism. During the consultation the priorities and requirements of the performance plan were discussed. It was also an opportunity to incorporate agreed changes into the plan. Stakeholders agreed with many of NSA proposals, nevertheless there were also areas of disagreement. Discussion during the meetings was open and created room for stakeholders to present their positions and expectations. Polish NSA conducted meetings on following dates: - 27 May 2021; - 28 June 2021; - 31 August 2021. Details concerning the results of the meetings are provided in the Annex C.

1.3.2 - Specific consultation requirements of ANSPs and airspace users on the performance plan

Topic of consultation	Applicable	Results of consultation
Where applicable, decision to diverge from the STATFOR base forecast	No	For the purpose of revised draft RP3 PP development, the scenario 2 (base) of May 2021 STATFOR forecast was used. However, it needs to be considered that STATFOR forecast provides only annual values – and some expected differences in traffic distribution over a year need to be considered. Based on information provided by NM as well as observations of actual traffic developments over 2021, it is expected that annual distribution of traffic over 2022+ will be different than the one observed in 2019 – with higher traffic levels over the peak summer season and lower levels over the remaining period. Latest data shows greater seasonality of traffic with summer season traffic recovering faster than annual averages – therefore for OPS staff planning it should be considered that for summer months 2019 traffic levels can be reached earlier than 2024 and that over summer months of 2024 traffic levels can be higher than 2019 actuals for this period. Moreover, under the 2022-2026 NOP planning process NM advised to consider scenario 1 for the summer season.
Charging policy	Yes	The charging policy in RP3 will be in line with Regulation 2019/317. The details about adjustments were presented in Annexes A (reporting tables for charging zones). No modulation of charges is planned to be implemented. CAA has not received any negative feedback on this topic.
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	For both en-route and terminal CAPACITY the incentive scheme provides similar advantages and disadvantages: - Max Bonus - 0.50% of DC - Max Penalty - 0.50% of DC
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	Yes	For en-route CAPACITY - based on NOP; For terminal CAPACITY - based on delays causes related to ATC (ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual).
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	Dead Band was set to ensure that slight deviations in ATFM delays around the Pivot Value will not lead to the application of penalties or bonuses. In case of Poland the value of the Dead Band is: - 20% min for en-route CAPACITY, - 20% for terminal CAPACITY.
Establishment or modification of charging zones	Yes	Poland has decided to maintain the current configuration of terminal charging zones (two TCZ). The decision upon its establishment was taken by the Polish Ministry of Infrastructure and delivered to EC. CAA has received not-supporting feedback from several airport managing bodies. In addition some of airspace users representatives (Lufthansa, IATA) expressed their support for site-specific configuration of terminal charging zones, while the representative of PLL LOT stated that two terminal charging zones are the required minimum.

Establishment of determined costs included in the cost base for charges	Yes	The proposed cost bases were presented in the draft Performance Plan and at the consultation meeting. The conistency between local and EU-wide cost-efficicency target was also presented. In general, CAA has received a negative feedback on the planned increase of air navigaion charges, mainly in the second terminal charging zone. Additionally, negative feedback was expressed on the lack of public support for ANSPs.
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	No	CAA does not plan to modulate the traffic risk sharing mechanism parameters
Where applicable, decision to apply the simplified charging scheme	No	CAA does not plan to implement simplified charging scheme.
New and existing investments, and in particular new major investments, including their expected benefits	Yes	For details, see Annex E.

1.3.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	PANSA (ATS, CNS, AIS, SAR coordination provider), Warmia i Mazury sp. z o.o. (AFIS, COM, MET provider), Port Lotniczy Bydgoszcz S.A. (AFIS, MET provider), Radom METEO (MET provider) and the Institute of Meteorology and Water Management – National Research Institute (MET provider).
Dates of main meetings / correspondence	27 May 2021; 28 June 2021; 31 August 2021 Exchange of information in a day to day working contact with ANSPs.
Main issues discussed	Presentation of the local targets values for the RP3 within KPAs of Safety, Environment, Capacity, Cost Efficiency and Incentive Scheme. Discussion concerning ANSPs development including investment plan and ATCO training plan. Presentation of the implementation and monitoring of the performance plans.
Actions agreed upon	ANSPs will take all necessary efforts to provide required capabilities to fulfil obligations and meet targets in all performance areas.
Points of disagreement and reasons	The Agency has very limited room for improvement of the KEA indicator depending only on factors beyond the Agency's control. ANSPs will do their utmost to reach the KEA values established by the European Commission (1.65%) but the political situation (Belarus, Ukraine, Kaliningrad, Afghanistan and other) is impacting KEA value in the Polish airspace.
Final outcome of the consultation	The targets of Safety, Environment and Capacity consisted with reference value have been agreed. CAA has not received any final negative opinion upon the cost-efficiency target from any ANSP.

Additional comments
Due to the pandemic situation the direct contact with representatives of ANSPs was limited. The cooperation was conducted mainly via electronic ways of communication.

#2 - Airspace Users	
Stakeholder group composition	IATA, LOT Polish Airlines, ENTER Air, Lufthansa, Ryanair, Polish Medical Air Rescue.
Dates of main meetings / correspondence	31 August 2021 / Correspondence: RYANAIR (20th August 2021), LOT (30th August 2021); Lufthansa (20th August 2021).
Main issues discussed	Presentation of the local targets values for the RP3 within KPAs of Safety, Environment, Capacity and Cost Efficiency. Presentation of the Investments and Incentive Scheme. The main issues discussed were concentrated on: 1. KPA Safety targets, 2. KPA Environment. The influence of the geopolitical situation on the performance plan, especially on horizontal flight efficiency. 3. KPA Capacity targets and incentive scheme, 4. Investments, including the changes in the scope and cost of investments, 5. ATCO training plans, especially the plans to increase the number of ATCO and ATCO productivity, 6. Planned increase of air navigation charges compared to 2021.

Actions agreed upon	1. Airspace Users agreed the proposed targets in KPA Safety. 2. Airspace Users expressed their support to proposed local HFE targets. They expressed their understanding for the ambitious EU Environment target and reference values for Poland. They appreciated Polish ANSPs aims to make all possible efforts to meet the target. The consensus was achieved despite of fact that there are some elements beyond PANSA's control which create a risk in this area. In the current unstable and unforeseeable circumstances the STATFOR having the best knowledge and anticipation of possible traffic evolution in the coming years, would be for us the most credible source of forecast. 3. Airspace Users agreed the proposed targets in KPA Capacity. 4. A number of investments implemented by ANSPs are interrelated and need to be implemented jointly to reach the goal. As a local factor a strong increase in construction material prices in Poland should be considered, which leads to increase in the value of investment tasks. 5. Airspace Users understood the plans to increase number of ATCOs in RP3. Current plans are combination of several factors, among other the following are the most important: a. Planned comprehensive FIR EPWW airspace changes. b. Planned airspace re-sectorisation following implementation of three layers vertical split, c. Increased needs related to ATCOs training. d. Expected possible different traffic distribution over seasons/months/weeks/weekdays/hours. 6. Airspace users gave a negative feedback in terms of planned increase of air navigation charges compared to 2021. In addition, the CAA received a strong suggestion that ANSPs should be supported by public funds to limit the increase of air navigatin charges. As regards UR increases, CAA stressed that the increases are visible in all States (lower traffic forecasts). As far as public support is concerned it was indicated that PL Government is supporting PANSA through a loan (the loan was offered by a state bank). Additional explanations on this regard were provided shortly after the consultation meeting.
Points of disagreement and reasons	6.No further questions or concerns on this from the airspace users' representatives.
Final outcome of the consultation	Despite critical comments concerning some of the proposed revised targets of the Performance Plan, only a limited number of issues is still questioned by Airspace Users. Both service providers and Airspace Users are open for further discussion and they are ready to cooperate to provide safe and efficient air navigation system. The influence of the COVID-19 pandemic is still very significant. The recovery of the aviation sector needs close cooperation, mutual understanding and continuation of endeavours providing conditions to achieve assigned tasks.

Additional comments
Please see Annex C for detailed description of the consultation meeting.

#3 - Professional staff representative bodies	
Stakeholder group composition	Technical Trade Union of PANSA.
Dates of main meetings / correspondence	31 August 2021
Main issues discussed	Technical Trade Union of PANSA recognizes the need of further digitization of processes in PANSA. An important part of this process is revolution is the iTEC system. This is the future core ATM system.
Actions agreed upon	The social site supported efforts aimed at further implementation of the new technologies and is deeply concerned about the risk of any plans of reducing the investment in innovations.
Points of disagreement and reasons	No disagreements.
Final outcome of the consultation	Support to the modernization plans.

Additional comments
Please see Annex C for detailed description of the consultation meeting.

#4 - Airport operators	
Stakeholder group composition	Solidarity Transport Hub Poland, Warszawa/Modlin Airport, Katowice Airport, Kraków Airport, Wrocław Airport, Gdańsk Airport, Lublin Airport, Łódź Airport.
Dates of main meetings / correspondence	31 August 2021 / Correspondence: Kraków-Balice Airport (17th August 2021), Lublin Airport (19th August 2021) Wrocław-Strachowice Airport (19th August 2021), Katowice-Pyrzowice Airport (19th August 2021), Łódź Airport (20th August 2021), Gdańsk im. Lecha Wałęsy Airport (7th September 2021)
Main issues discussed	1. Investments, including: a. investment related to Solidarity Transport Hub –STH, b. cost allocation of the new investments, 2. Airport conditions due to the COVID pandemic and support for the airports, 3. Terminal charging zone configuration for RP3. 4. Planned increase of air navigation charges compared to 2021.

Actions agreed upon	The current stage of STH development is the planning phase. PANSA is closely cooperating with the company responsible for the STH project and if there are any changes in the schedule for that project PANSA will adjust investment plans respectively. Some of Airport operators representatives supported the two charging zones configuration as presented in the PP. 3. Some airport operators representatives expresed their negative feedback on the two charging zones configuration, suggesting that one charging zone would be a better option, especially considering the COVID-19 pandemic impact. CAA provided an explanation on this topic and informed that the current configuration of terminal charging zones (two TCZ, decizion taken by the Polish Ministry of Infrastructure) will be maintained. 4. Airport operators representatives expressed their disagreement with reference to the planned increase of air navigation charges. In addition they also raised the issue of no public support for ANSPs. CAA clarified the issue, both during and shortly after the consultation meeting (email correspondence).
Points of disagreement and reasons	3. Terminal charging zone configuration will not be changed during RP3, CAA claryfied the issue during the consultation meeting and there were no further questions or concerns on this from the airport operators representatives. 4. Airport operators maintain their position expressed during the consultation meeting, i.e. no approval for the planned increase of terminal charges and the need for public support for ANSPs.
Final outcome of the consultation	Some of Airport operators did not support the planned increase of air navigation charges. The Airport operators at EPGD, EPLL have provided their additional statements to this regard.

Additional comments
Please see Annex C for detailed description of the consultation meeting.

#5 - Airport coordinator	
Stakeholder group composition	Not applicable.
Dates of main meetings / correspondence	Not applicable.
Main issues discussed	Not applicable.
Actions agreed upon	Not applicable.
Points of disagreement and reasons	Not applicable.
Final outcome of the consultation	Not applicable.

Additional comments
Not applicable.

#6 - Other (specify)	
Stakeholder group composition	Representatives of PRB, EUROCONTROL and Ministry of Infrastructure.
Dates of main meetings / correspondence	31 August 2021
Main issues discussed	1. The local factors influencing Performance Plan. 2. The values of performance targets
Actions agreed upon	Not applicable.
Points of disagreement and reasons	Not applicable.
Final outcome of the consultation	The remarks concerning revised Polish Performance Plan were taken.

Additional comments
Please see Annex C for detailed description of the consultation meeting.

1.4 - List of airports subject to the performance and charging Regulation

1.4.1 - Airports as per Article 1(3) (IFR movements ≥ 80 000)

ICAO code	Airport name	Charging Zone	IFR air transport movements			
			2016	2017	2018	Average
EPWA	Chopina w Warszawie	Poland - EPWA	153 805	171 059	187 235	170 700

1.4.2 Other airports added on a voluntary basis as per Article 1(4)

Number of airports	14		
ICAO code	Airport name	Charging Zone	Additional information
EPKK	Kraków-Balice	Poland - Others	Average IFR movements in 2016-2018: 49 897
EPGD	Gdańsk im. Lecha Wałęsy	Poland - Others	Average IFR movements in 2016-2018: 40 394
EPKT	Katowice-Pyrzowice	Poland - Others	Average IFR movements in 2016-2018: 32 499
EPWR	Wrocław-Strachowice	Poland - Others	Average IFR movements in 2016-2018: 27 247
EPPO	Poznań-Ławica	Poland - Others	Average IFR movements in 2016-2018: 20 750
EPRZ	Rzeszów-Jasionka	Poland - Others	Average IFR movements in 2016-2018: 8 467
EPSC	Szczecin-Goleniów	Poland - Others	Average IFR movements in 2016-2018: 5 701
EPBY	Bydgoszcz	Poland - Others	Average IFR movements in 2016-2018: 3 598
EPMO	Warszawa/Modlin	Poland - Others	Average IFR movements in 2016-2018: 19 196
EPLL	Łódź	Poland - Others	Average IFR movements in 2016-2018: 4 139
EPLB	Lublin	Poland - Others	Average IFR movements in 2016-2018: 3 856
EPZG	Zielona Góra-Babimost	Poland - Others	Average IFR movements in 2016-2018: 855
EPRA	Radom-Sadków	Poland - Others	Average IFR movements in 2016-2018: 1 031
EPSY	Olsztyn-Mazury	Poland - Others	Average IFR movements in 2016-2018: 1 349

Additional comments
In Poland only Warsaw Chopin Airport (EPWA) has more than 80.000 IFR movements per year, so the Performance and Charging Regulation (Implementing Regulation 2019/317) directly applies to this airport. In addition, based on the decision of the Minister of Infrastructure, Poland acted in line with the Article 1.4. of the Regulation 2019/317; therefore it was decided to apply the provisions of the Regulation to the terminal ANS at fourteen regional airports (Kraków-Balice, Gdańsk im. Lecha Wałęsy, Katowice-Pyrzowice, Wrocław-Strachowice, Poznań-Ławica, Rzeszów-Jasionka,Szczecin-Goleniów, Bydgoszcz, Warszawa/Modlin, Łódź, Lublin, Zielona Góra-Babimost, Radom-Sadków and Olsztyn-Mazury) with fewer than 80.000 IFR movements per year, as they are part of the common Terminal Charging Zone - TNC-Other. For actual figures of IFR MVS for regional airports, see: EUROPEAN ANS Performance Data Repository http://ansperformance.eu/data/performancearea/

1.5 - Services under market conditions

Number of services under market conditions	0

1.6 - Process followed to develop and adopt a FAB Performance Plan

Description of the process
Not applicable

1.7 - Establishment and application of a simplified charging scheme

Is the State intending to establish and apply a simplified charging scheme for any charging zone/ANSP?	No

SECTION 2: INVESTMENTS

2.1 - Investments - Polish Air Navigation Services Agency (PANSA)

- 2.1.1 - Summary of investments
- 2.1.2 - Detail of new major investments
- 2.1.3 - Other new and existing investments

2.2 - Investments - Institute of Meteorology and Water Management - National Research Institute (IMWM)

- 2.2.1 - Summary of investments
- 2.2.2 - Detail of new major investments
- 2.2.3 - Other new and existing investments

2.3 - Investments - Radom Meteo sp. z o.o.

- 2.3.1 - Summary of investments
- 2.3.2 - Detail of new major investments
- 2.3.3 - Other new and existing investments

2.4 - Investments - Warmia i Mazury sp. z o.o.

- 2.4.1 - Summary of investments
- 2.4.2 - Detail of new major investments
- 2.4.3 - Other new and existing investments

2.5 - Investments - Port Lotniczy Bydgoszcz S.A.

- 2.5.1 - Summary of investments
- 2.5.2 - Detail of new major investments
- 2.5.3 - Other new and existing investments

Annexes of relevance to this section

ANNEX E. INVESTMENTS

NOTE: The requirements as per Annex II, 2.2.(c) are addressed in item 4.1.2

2.1 - Investments - Polish Air Navigation Services Agency (PANSA)

2.1.1 - Summary of investments

Number of new major investments	12

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1	01440701_Campus	722 261 693,19	167 859 621	243 422	275 706	511 449	1 801 404	5 735 184	40	93%	7%	after RP3
2	02440701_Communication_systems	54 777 201,50	40 095 848	50 469	253 279	1 555 903	2 763 951	4 168 370	00/15/20	100%	0%	2024, after RP3
3	03440701_iTEC	274 984 161,16	170 534 160	458 299	727 953	2 015 604	4 193 469	5 843 007	10	100%	0%	after RP3
4	06440701_VCS_system	34 620 195,72	14 820 196	0	13 631	107 591	268 451	606 210	05/15	100%	0%	after RP3
5	21440701_ATM_OPS_Centre_Poznan	92 335 658,74	4 447 011	2 041 113	2 773 247	5 056 443	5 082 500	5 065 357	07/20/40	100%	0%	2021, 2022
6	IP470701_U-Space_Program	29 110 511,63	11 242 540	23 225	133 519	463 040	778 662	1 063 564	10	0%	100%	after RP3
7	IT170202_Tower_at_the_Central_Hub_Airport	61 538 020,32	38 020	0	0	0	0	899	15/40	30%	70%	after RP3
8	IT430803_Radar_PSR/MSSR_Gdańsk	24 966 688,34	24 960 773	150	429	103 763	683 668	2 289 011	15/20	100%	0%	2024
9	IT430900_Modernization_of_the_ATM_system_2	101 011 895,22	34 821 458	115 698	536 262	2 605 840	3 820 586	3 743 463	10/15	88%	12%	2022
10	IT440732_MLAT_system_for_FIR_Warsaw	35 950 118,80	22 683 430	0	1 494	75 903	365 687	1 748 413	10	90%	10%	after RP3
11	IR470209_CWP_TWR	32 313 561,60	8 445 298	16 715	38 434	284 447	337 256	455 460	07/10/40	88%	12%	after RP3
12	IT430404_Server_Business_Infrastructure	25 985 556,32	20 795 077	0	24 704	459 203	2 070 770	4 132 891	05	81%	19%	recurring
Sub-total of **new major investments** above (1)		1 489 855 263	520 743 431	2 949 091	4 778 658	13 239 186	22 166 404	34 851 828				
Sub-total **other new investments** (2)		822 072 250	406 576 722	2 022 374	4 940 731	18 595 257	33 513 157	43 222 372		86%	14%	
Sub-total **existing investments** (3)				145 157 661	146 846 296	156 330 820	143 371 651	131 784 305		84%	16%	
Total new and existing investments (1) + (2) + (3)		2 311 927 513	927 320 153	150 129 125	156 565 685	188 165 264	199 051 212	209 858 505				

** The total % enroute+terminal should be equal to 100%.*

2.1.2 - Detail of new major investments

NOTE: Section 1.3 (Stakeholder Consultation) should include details on the consultation with airspace users' representatives on new major investments.

Name of new major investment 1	***01440701_Campus***	Total value of the asset	***722 261 693,19 PLN***

Description of the asset	The aim of the project is to build a new PANSA headquarters. The project includes construction of a new ACC and APP OPS room to take over all operational functions of the current facility in Warsaw (excluding EPWA TWR and Training Center). The new Campus will become the place from which the majority of air traffic (ACC, APP) and auxiliary services for Poland will be performed. The new Campus will replace the existing facilities of the PANSA used to that end. Current PANSA premises do not provide enough space and are functionally not sufficient and their technical limitations prevent further development. The following main functionalities are planned at the Campus: • Significantly larger ACC OPS room enabling installation of new ATCO workstations necessary to open more sectors wherever the need arises, also correlated with the Solidarity CTH investments. • Creation of new autonomous APP OPS rooms (currently APP and ACC OPS rooms in Warsaw premises are combined with very limited space and technical possibilities for development). • Construction allowing for installation of technical equipment outside OPS room – improving ATCO working conditions. • Infrastructure for creation of a Big Data Centre - application of solutions ensuring data security. • Providing space for future virtual airport control towers (rTWR). • Creating infrastructure for development of other technologies. • Facilities for crisis prevention and management. • Solutions supporting new technologies and required level of safety and security, as well as energy savings. New Campus will house installation of the new ATM system - iTEC, which due to technical limitations cannot be installed in the current Warsaw buildings. The total value of the assets increased (in comparison with 2019 CAPEX forecast), as a result of the accomplishment of the project development phase of the investment. It should be emphasized that until the design documentation was accomplished, the value of the investment was an estimation and was based on the indicative price estimation method. As a result of the completion of the design phase the priced bill of quantities was prepared, and the total value of the investment has been made more realistic taking into account the actual (at the time of preparing the documentation) valuation of the applied solutions against the estimated valuation. Due to the COVID-19 pandemic, the investment schedule has been revised and phased approach has been foreseen to the Campus construction. The construction schedule and phasing is closely correlated with the schedule of the ATM system (iTEC) implementation. The schedule and detailed elements of each phase can be subject to further refinements. At the current stage the following phases are considered: I phase - The operational building A and B, which includes technical building with the power supply, compresive undeground infrastructure (waste water and rain water sewer network, water mains), fire-protection systems that allow early fire detection (SAP), a fire-extinguishing system located in the premises that are most critical for operations, utilities i.e. electricity, gas, water, sewage system, access and internal roads as well as parking places and guard-houses for security; the planned start of the stage is 2023, and the planned completion date after RP3 (2029). II phase - HQ building with a undeground staff car park; planned start of the stage is after RP3. III phase - The warehouse and social housing; planned start of the stage is after RP3. Preparation of time and work schedule for the first phase of the project (construction of operational elements of the facility) is currently ongoing.	
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No	
Level of impact of the investment	Network	Yes
	Local	Yes
	Non-performance	
Quantitative impact per KPA	Safety	Improving safety in FIR Warszawa through elimination of “single points of failure” and prevention of any possible failures in the main ATM system (reduced risk of ATM system and database failure). Ensuring the continuity of ANS provision and security along the increase in air traffic. Improving safety through increased system resilience to cybersecurity threat. Improvement of work standards in CWP, including improvement of ATCO working conditions, the ability to implemented a new ATM system without distruption or interruption of air operations.
	Environment	Possibility of opening additional sectors will have positive impact on flight trajectories (shorter routes and optimisation of flight profile)
	Capacity	Improved ability to adapt to air traffic flows and increase of airspace capacity through additional workstations (possibility to open additional ACC sectors) and implemented new ATM system. Allowing for uninterrupted air operations - reduced risk of irregularities (reduced cost of delays/interruptions). Ability to implemented a new ATM system without distruption or interruption of air operations.

	Cost Efficiency	Cost-effectiveness, obtained from the implementation of solutions for new infrastructure (e.g. energy saving infrastructure). For quantitative impact of RP3 major investments (result of CBA analysis expressed in NPV) please see Annex E.
Results of the consultation of airspace users' representatives	Please see Annex E.	
Joint investment / partnership	No	
Investment in ATM systems	No	The campus construction itself does not constitute investment in ATM system. However, new campus is a compulsory element for iTEC implementation in PANSA - the current HQ does not meet the infrastructure requirements for system installation. Therefore campus should be considered as enabler to the new ATM system implementation. As such, the investment is also a key enabler for PANSA's future, continuous process of digital transformation by enabling optimisation, automatization, virtualization and digitalisation of key processes and by enabling future deployment of new technologies.
If investment in ATM system, type?	Click to select	Not applicable.
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	Not applicable.

Name of new major investment 2	***02440701_Communication_systems***	Total value of the asset	***54 777 201,50 PLN***
Description of the asset	The project is directly related to new ATC centres: Campus and ATM OPS Centre Poznań aimed at providing ACC and APP services, and to the new ATM system. The project goal is to provide the newly-built air traffic control centres with the necessary communication infrastructure/systems (G-G, A-G) for both voice and data transmission. A part of the project is building new radio-communication stations for ATS (ACC). Additionally, the project requires installation of necessary technical equipment such as: structured cabling, rack cabinets and a power system for devices installed in cabinets, etc. The project covers only COM system for en-route services – does not include TWR units. Providing the Poznań ATC Center and the ATC Center in Reguły with the necessary systems for voice communication and data transmission is a precondition for achieving operational capabilities by the Poznań ATC Center and the ATC Center in Reguły. The following main functionalities are planned: • Creation of infrastructure necessary for digital data transmission, • Creation of reliable, professional voice and data transmission systems, improving efficiency of ATCO work and enabling reducing reaction time, * Equipment and infrastructure necessary for new radiolocation centre, • Enabling implementation of new technologies and system solutions, including satellite communication. The communication systems are precondition for achieving full operational efficiency of the new ATC centres - current ATC facilities in Warsaw do not provide sufficient space or technical possibilities for implementation of new technologies. Also, the implementation of this investment is a key factor for enabling some important features related to the Common Project 1 (s-AF 5.6 Flight information exchange (FO)) as well as to the ATM MP/LSSIP objectives (COM11.1 Voice over Internet protocol (VoIP) in en-route). An efficient data flow is based on a data transmission skeleton which will be created as a main project's product. It will also be a key factor/enabler for providing ATM Data Service (ADS) to all potential clients/beneficiares. Final costs are not available yet, but to provide reliable estimation current value is based on information collected from the ATM system provider in 2021.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
Level of impact of the investment	Network	Yes (as the new Campus and ATC OPS Centre Poznań)	
	Local	Yes	
	Non-performance		
	Safety	Securing continued access to services. Ensuring the safety of operations by securing ground and air-to-ground communication. Safety level maintained along traffic growth. Improving safety through reduction of reaction time to operational events and increasing situational awareness of ATCOs.	
	Environment	No impact	

Quantitative impact per KPA	Capacity	Ensuring continuity of ANS in case of ATC centre in Warsaw failure (contingency provision). Increased airspace capacity through enabling operational implementation of new ATC centres. Reduced risk of irregularities resulting in lower cost of delays.
	Cost Efficiency	Benefits should be considered in conjunction with the Poznań ATC Centre and the ATC Centre in Reguły. For quantitative impact of RP3 major investments (result of CBA analysis expressed in NPV) please see Annex E.
Results of the consultation of airspace users' representatives	Please see Annex E.	
Joint investment / partnership	No	
Investment in ATM systems	No	The communication systems itself do not constitute investment in ATM system. However, the project is directly related to ATC centres and should be considered as enabler to putting into operation new ATC centres, which are a condition for the new ATM system implementation.
If investment in ATM system, type?	Click to select	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	Although the investment does not constitute investment in ATM system, the following links to ATM MP can be identified: ATM MP/LSSIP: COM11; ITY-AGVCS2; The investment falls under a digitalisation thread and contributes to the idea of Digital European Sky concept. CP1: an enabler for s-AF5.6 Flight information exchange.

Name of new major investment 3	***03440701_iTEC***	Total value of the asset	***274 984 161,16 PLN***
Description of the asset	The project covers new iTEC core ATM system planned to be installed in the new ATM OPS Center in Poznan and new Campus in Reguły. iTEC system will be an evolution of the currently-used PEGASUS_21 combined with key components acquired as part of iTEC Collaboration, which are jointly developed and financed by a group of leading ANSPs in Europe. Currently, the scope of cooperation includes iFDP modules (Flight Plan Data Processing), iCWP (Controller Working Position) and iMAS (Middleware), but further convergence is foreseen to elaborate a single operational concept and uniform ATM system. iTEC will be primarily dedicated to ACC and APP units – TWR units are to be supported by other systems (following implementation of Electronic Flight progrEss Strips and Virtualization of ATS airport services). The following main functionalities are planned: • Modern system, based on common, uniform open code standards (easier development and extension than P_21), • Full interoperability (incl. Flight Object Interoperability, SWIM), • 4D flight trajectory, • Flexible airspace structures management with increased number of elementary structures, • Advanced trajectory modelling /management algorithm, enabling full cross-border FRA implementation (comes along with the bulltet on FO IOP; the fact that the P_21/iTEC system will be an evolution of the currently-used PEGASUS_21 is determining the continuity of the cross-border FRA implementation; the fact that it will be the iTEC system is driving towards FO IOP functuonality and the inter-system trajectory connectivity), • Virtualization (independent of equipment and facilities), • Increased reliability, • Test/validation environment for SESAR2020 R&D solutions and trainnings. Positive impact is expected through: modular architecture, cheaper and faster implementation of new technologies, vitrualization/reliability/flexibility of the system, more efficient international cooperation, easier implementation of new SESAR solutions. The project will be implemented in two stages. The first is the new ATM contigency system in ATC Center Poznań (delivery, installation and implementation of the first version in ATC Center Poznań for testing, validation and ATCO trainning), while the second includes implementation of the new ATM system in new Campus (an upgrade version to support the complexities of the airspace in this area). The total value of the asset increased as a result of change in valuation and scope. Current concept of installing the system in Poznań ATC Center assumes system based on iTEC V3 components, while earlier iTEC V2 was considered. The total value of the asset was revised but the value of the asset allocated to ANS in the scope of the RP3 PP is not expected to change, as large part of the project will extend beyond the RP3 timeframe.		

The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	The new ATM system will include functionalites mandated by CP1 (EU Regulation 2020/116 on the establishment of the Common Project One supporting the implementation of the European Air Traffic Management Master Plan) - it will continue with fuctionalities listed under PEGASUS system upgrade 2 below.						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
			• AF#3 - Flexible ASM and FRA o Sub-AF 3.1 Airspace management and advanced flexible use of airspace o Sub-AF 3.2 Free Route Airspace		• AF#5 - Initial SWIM o Sub-AF 5.6 Flight information exchange (FO) - yellow profile	• AF#6 - Initial Trajectory Information Sharing o Sub-AF 6.1 Initial Air-Ground trajectory information sharing o Sub-AF 6.3 Initial trajectory information sharing ground distribution		
Benefits for airspace users and results of the consultation of airspace users' representatives	Please see Annex E.							
Joint investment / partnership	Yes	The system deployed in the new centers will have the core components upgraded to the versions developed within the iTEC alliance. PANSA is part of iTEC Collaboration, alliance aiming at development of common ATM system amongst all partners (DFS, NATS, ENAIRE, LVNL, AVINOR, PANSA, ON and INDRA). The system deployed in the new centers will have core components which will be part of iTEC Collaboration common activities and projects. PANSA and SE OroNavigacija, both as iTEC Collaboration partners and Baltic FAB partners cooperate in the frame of SDM governed implementing projects to deploy PCP and CP1 framework.						
Investment in ATM systems	Yes							
If investment in ATM system, type?	Overhaul of existing system	The iTEC system will be an evolution of the currently-used PEGASUS_21 combined with key components acquired as part of iTEC Collaboration.						
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	iTEC core components are enablers for the medium to long-term Master Plan subjects, especially: • ATC15.2 - Arrival Management Extended to En-route Airspace • ATC17 - Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer • ATC18 - Multi Sector Planning En-route - 1P2T • OD-5 – Virtual Centre concept, CWP and service interface • FCM08 - Extended Flight Plan The investment is linked with and supports the implementation of the following ATM Functionalities of the PCP/CP1 regulation: • s-AF 1.1 Arrival management extended to en-route airspace (Poland/PANSA outside of the geographical scope of the CP1 regulation) • s-AF 3.1 Airspace management and advanced flexible use of airspace • s-AF 3.2 Free Route Airspace • s-AF 5.6 Flight information Exchange (yellow profile) • s-AF 6.1 Initial Air-Ground trajectory information sharing • s-AF 6.3 Initial trajectory information sharing ground distribution						

Name of new major investment 4	***06440701_VCS_system***	Total value of the asset	***34 620 195,72 PLN***
Description of the asset	The project covers VCS system (technical devices) for FIR Warszawa (directly related to PANSA new ATC centres: in Poznan and the new Campus, aimed at providing ACC and APP services) with dedicated communication infrastructure. The project consists of equipping the air traffic controller stations in these two new OPS centres with the VCS (Voice Communication System) system, integrating all available communication systems. The following main functionalities are planned: • Integration of aeronautical communication networks (radio and fixed) with access from all ATCO workstations, • Recording of all communication at ATCO workplace – required for occurrence investigation, • VCS system in ATC OPS Centre Poznań reflecting system implemented in current ATC OPS room in Warsaw to facilitate prompt shifting of operations in case of Warsaw location unavailability (contingency), • Additional functionalities in OPS room in Campus – integration of VCS with ATM system, • Implementation of Voice over IP functionality supporting flexible access management. This project aims at deployment of infrastructure that is necessary for voice transmission and it falls within the digital transformation of PANSA. In a broader context, it is also an enabler for the concept of VoIP Services that consists in the digital evolution of the current European ATM infrastructure (respectively VCS). As such, it falls within the development of a new technology solution allowing the implementation of new ATM Data Services and it is aligned with EC's SES2+ recent proposals and ideas depicted in the Airspace Architecture Study (AAS)/AAS Transition Plan and the ATM Master Plan (edition 2020). On the basis of a holistic approach for COM services and the need for ADSP-oriented business model creation, VCS is a part of future COM architecture. The VCS system is required for operational implementation of the new ATC (ACC, APP) centres - current ATC facilities in Warsaw do not provide sufficient space for installation of new technologies. The schedule was adjusted to the implementation schedules of the Poznań ATC Center and the Reguły ATC Center.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes		

	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)			• AF#3 - Flexible ASM and FRA o Sub-AF 3.1 Airspace Management and Advanced Flexible Use of Airspace				

Benefits for airspace users and results of the consultation of airspace users' representatives	Please see Annex E.	
Joint investment / partnership	No	
Investment in ATM systems	No	The VCS system itself does not constitute investment in ATM system. However, the project is directly related to ATC centres and should be considered as enabler to the new ATM system implementation.
If investment in ATM system, type?	Click to select	Not applicable.

If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	The following links with ATM MP and CP1 and other strategic documents can be identified: ATM MP/LSSIP: COM11 Voice over Internet protocol (VoIP), SESAR Enablers: CTE-C05a, CTE-C05b; AAS Transition Plan: Milestone 1.3; CP1: AF#3 - Flexible ASM and FRA, Sub-AF 3.1 Airspace Management and Advanced Flexible Use of Airspace

Name of new major investment 5	***21440701_ATM_OPS_Centre_Poznan***	Total value of the asset	***92 335 658,74 PLN***
Description of the asset	Construction of an ATC Centre Poznań with required operational and technical infrastructure. ATC Centre Poznań will be the contingency centre for FIR Warszawa (in the future for the Campus), including for EPWW ACC and other regional APP centres. The project consists of building a backup center for air traffic control services located in Warsaw and main center for the approach control services (APP) for Poznan TMA. The project includes preparation of design documentation and construction of a new ATC Centre in Poznań together with technical infrastructure allowing further development of ATM system, development of R&D projects for further CNS/ATM improvement, support to new functionalities implementation. The following main functionalities are planned: • primary location for Poznań APP services and Poznań FIS services, • backup center for EPWW ACC and other regional APP centres (Warsaw, Kraków, Gdańsk) enabling services continuity up to 100% (current EPWW contingency abilities: up to 30% of 2019, • providing space for the development of new technology NAVIHub (center for research, development and innovation in ATM), and future virtual airport control tower centre (RTC). • environment for testing/validating and developing of new iTEC ATM system enabling acceleration of iTEC implementation as PANSA main ATM system. Given the last point above, the investment needs also to be understood as a future important center supporting research and innovation activities at PANSA. The results of the testing, validation and development activities concerning the P_21/iTEC ATM system will become part and will influence further development of iTEC OneSky system which will be utilized by other iTEC members. The total value of the asset slightly increased since 2019 due to the need for additional works necessary for putting the center into operation - the need arose during the works. Small change of schedule (due to COVID).		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
Level of impact of the investment	Network	Yes	
	Local	Yes	
	Non-performance		
Quantitative impact per KPA	Safety	Improving safety in FIR Warszawa through elimination of “single points of failure” and ensuring the continuity of ANS provision (contingency centre).	
	Environment	Avoiding negative impact of possible Warsaw ACC center closure on flight trajectories and thereby avoiding higher emissions and related costs and increased operating (non-fuel) costs for aircraft operators.	
	Capacity	Ensuring continuity of ANS in FIR Warszawa, including preventing significant limitation of EPWW capacity in case of ACC OPS room failure (contingency). Reduced risk of irregularities (lower cost of potential delays). If Warsaw traffic control centre was closed, 70% od air traffic would be negatively affected (canceled flights, delays).	
	Cost Efficiency	Lower future iTEC implementation costs as the main PANSA ATM system in the campus. For quantitative impact of RP3 major investments (result of CBA analysis expressed in NPV) please see Annex E.	

Results of the consultation of airspace users' representatives	Please see Annex E.	
Joint investment / partnership	No	
Investment in ATM systems	No	Thanks to the investment, research and innovation activities could be undertaken with a view of testing, validating and developing of new iTEC ATM system in order to accelerate iTEC implementation as PANSA main ATM system.
If investment in ATM system, type?	Click to select	Not applicable.
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	Not applicable.

Name of new major investment 6	***IP470701_U-Space_Program***	Total value of the asset	***29 110 511,63 PLN***
Description of the asset	The name of the investment refers to U-space/ UAV environment for ease of internal processes in PANSA – despite this name, the scope of the investment does not cover full set of functionalities related to U-space/ UAV environment, but especially those related to ensuring efficient procedural and cooperative interface with ATC/ATM, as covered by PANSA ANS/ATM certificate. The investment aims at deployment of the ATC interfacing system in line with the SESAR U-space Blueprint and the investment predictions expected from ANSPs on basis of the document European ATM Master Plan: Roadmap for the safe integration of drones into all classes of airspace. This is reflected in the new edition of ATM Master Plan (ver 2020). The U-space programme at PANSA includes two projects: "Unmanned Traffic Management integration with ATM systems" and "Tracking of UAVs". Growing number of UAV flights in Controlled Zones (CTRs) showed the need for digitisation of the coordination process and the simplification of flight approval process. The system's primary goal is to support Air Traffic Controllers in providing safe air navigation services to manned aircraft and ensuring separation. The project constitutes a support to PANSA Tower Systems Development (TWR) plans, as well as a requirement and service to aerodrome control services. PansaUTM system along with the other interoperable systems for ATCOs like the Electronic Flight progrEss Strips (EFES) system and PANDORA aeronautical information display system, is considered to play a significant role in ensuring safe, continuous, smooth and efficient air navigation in Polish airspace for all airspace users. The PansaUTM system is currently operationally running on all 15 TWRs and 5 FIS sectors in Poland supporting operational and situational awareness of operational staff, managed by the dedicated UAS Operations Department at PANSA. The PansaUTM system might be subject of possible integration with other ATM systems in the future such as iTEC system of FIS electronic flight strips. The investment project will cover the following assets: • The system (intangible asset), which supports procedural and collaborative interface with existing ATM system to facilitate coordination of manned traffic and support ATS work providing required additional information on UAVs and its additional development to new versions due to the change of regulations concerning drone operations (including National and European regulations); • Infrastructure and systems for UAVs tracking (excluding detection). The following main functionalities are planned: • Digitisation and automation of UAV flight coordination with PANSA digitising the procedural and collaborative interface with ATC, • Visualisation of UAV operations on display supporting the provision of air navigation services for manned aircraft, • Potential conflict situation identification and emergency management function informing non-verbally on ie. loss of control of the UAV which minimizes the risk of separation minima infringement to manned aircraft. Investment is necessitated by dynamic increase of UAV operations especially in controlled zones and still current safety concerns regarding unattended drones which might interfere with safe air navigation services provision. The project does not include UAV traffic management services (understood as those outside of the scope of ATM/ANS definition in SES Regulations), as well as UAV detection and drone defence systems, which are currently out of scope ANSPs agenda and function. Since 2019 update of the value and schedule wad done due to changes in the project execution.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
Level of impact of the investment	Network	Yes	
	Local	Yes	
	Non-performance		

Quantitative impact per KPA	Safety	Maintaining level of safety along the dynamic increase in UAV traffic through improved situational awareness of ATCOs (more accurate prediction of potential collisions through identification of UAV position and visualisation of flight trajectory). Reduced workload for ATCOs through automation and digitalisation of procedural ATC interface. The system will be a core element of U-space concept implementation, in line with the latest edition of ATM Master Plan, as a single point of truth which will provide the reliable information to ATCOs to support air navigation service provision as defined in Article 2 (4) of Regulation (EC) No 549/2004. It would help to obtain information on cooperative and help to identify non-cooperative drones, which occasionally are reported to ATC by manned aircraft air crew and might endanger the existing level of safety of manned aircraft operators (current airspace users). The system is aimed at minimisation of number of incidents related to drones and potential hazard of uncooperative drones by providing the interface to ATC from expected different U-space service providers on the market. Tracking would help preserve the airspace infringements in the airports' controlled zones, decreasing number of potential incidents, which might cause missed approaches and delays and related unnecessary costs for impacted stakeholders. The project excludes UAV detection and drone defence systems, which are currently out of scope of ANSPs agenda and function.
	Environment	UAVs tracking would bring additional information on current position of the UAV, which would be an asset in decision making process of ATCOs concerning the possibly impacted manned traffic in controlled airspace, limiting potential holdings on approach/go-arounds (missed approaches) or waiting time before departure and thereby leading to lower emissions. Limiting risk of negative operational consequences (diversions, holdings) in case of incursion of aircraft into controlled zones – reduced fuel burn and related costs in case of holdings.
	Capacity	Digitisation of the UAV flight coordination process at Controlled Zones (CTRs) would reduce time needed for granting the permission, increase the number of possible flights and lower the workload of the ATCOs due to introduction of 2-way non-verbal communication between ATCO and the UAV operator. It would eliminate the voice coordination. The tracking methods to be eventually introduced to the system would help to increase capacity and to identify the true location of the UAVs. Greater awareness of UAV traffic around airports and interface with ATM systems will preserve the airspace infringements in the controlled zones and separation minima infringements, and as a result would decrease potential incidents which might cause missed approaches and delays. Limiting risk of negative operational consequences (diversions, holdings) in case of incursion of aircraft into controlled zones – reduced delays.
	Cost Efficiency	Lower workload related to the flight coordination process – both for TWR ATCO and for PANSA staff issuing permissions for UAV operations in Controlled Zones. Avoiding potential ATCO number increase dedicated to UAV traffic services. For quantitative impact of RP3 major investments (result of CBA analysis expressed in NPV) please see Annex E.
Results of the consultation of airspace users' representatives	Please see Annex E.	
Joint investment / partnership	Yes	Partnership with HAWK-E/ Droneradar until the end of 2020. Currently without partnership.
Investment in ATM systems	No	Partly as the Interface with the ATC and integration with ATM systems.
If investment in ATM system, type?	Click to select	Not applicable.
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	Investment in line with investment predictions expected from ANSPs on the basis of the document European ATM Master Plan: Roadmap for the safe integration of drones into all classes of airspace as incorporated to the latest edition of the ATM Master Plan (interface with ATC service).

Name of new major investment 7	***IT170202_Tower_at_the_Central_Hub_Airport***	Total value of the asset	***61 538 020,32 PLN***
Description of the asset	New Tower for Central Hub - construction of a new Tower building with supporting facilities and systems. The scope of the project includes design works, construction works, purchase of technical equipment and operational implementation. Related assets include TWR builnding, power supply systems, utilities infrastructure, furniture, equipment related to administrative and social functionalities as well as basic ATCO stations equipment (without ATC-related systems). The task schedule is closely correlated with the Solidarity CTH investments.		

The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No	
Level of impact of the investment	Network	Yes
	Local	Yes
	Non-performance	
Quantitative impact per KPA	Safety	The tower will contribute to the overall safety at the airport.
	Environment	
	Capacity	TWR is necessary to provide ATS Services at the airport. The airport is planned to provide required capacity in the light of air traffic increase in the region. Therefore the TWR infrastructure needs to be considered as an integral element of providing capacity to accommodate growing traffic to/from Poland/region. It is aimed at enabling aircraft operations at the new hub airport to be built in the light of limited Warsaw Chopin Airport capacity.
	Cost Efficiency	For quantitative impact of RP3 major investments (result of CBA analysis expressed in NPV) please see Annex E.
Results of the consultation of airspace users' representatives	Please see Annex E.	
Joint investment / partnership	No	
Investment in ATM systems	No	
If investment in ATM system, type?	Click to select	Not applicable.
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	Not applicable.

Name of new major investment 8	***IT430803_Radar_PSR/MSSR_Gdańsk***				Total value of the asset		***24 966 688,34 PLN***	
Description of the asset	New radar PSR/MSSR (replacement of currently used radar PSR/MSSR) with associated infrastructure. The project covers design and installation of radar facility, including construction of necessary building elements as well as communication lines, construction of technical building with supporting power supply and telecommunication connections and road access and fence. New Mode-S functionality is planned to be introduced. The project includes the construction of radar facilities for the needs of approach control (with the possibility of using it also for area control). The following main functionalities are planned: • PSR/MSSR surveillance in Gdańsk TMA, • Mode-S functionality. Replacement required to ensure reliability of SUR infrastructure and service continuity. The investment falls within the ATM MP (edition 2020) i.e. the Essential Operational Change concerning CNS infrastructure and services that seeks to optimize CNS infrastructure across Europe. The optimisation process should be consistent with the CNS Roadmap (as included in the ATM Master Plan), targeting surveillance architecture, with cost and spectrum efficiency, composed of ADS-B and a Minimal Operational Network including Mode S radars and Multilateration systems. The investment is also linked and supports the ADS-B implementation plan. As a result of the COVID-19 pandemic, the decrease in air traffic and the need to reduce capital expenditure, the schedule for the task execution was extended.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the Single European Sky						
	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	

Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)							Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the single European sky	
Benefits for airspace users and results of the consultation of airspace users' representatives	Please see Annex E.							
Joint investment / partnership	No							
Investment in ATM systems	No							
If investment in ATM system, type?	Click to select	Not applicable.						
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	Not applicable.						

Name of new major investment 9	***IT430900_Modernization_of_the_ATM_system_2***					Total value of the asset	***101 011 895,22 PLN***	
Description of the asset	Continuation of maintenance and development of Pegasus_21 ATM system installed in 2013 (the existing core ATM system in PANSA). Scope of changes foreseen for RP3 covers, i.a. implementation of third layer of vertical split, increasing number of ATCO workstations, support to full Mode-S implementation, ongoing implementation of recommendations following incident investigation, implementation of functionalities supporting coordination with TWR electronic flight strips system and implementation of changes supporting cross-border OLDI shortcuts (precondition for cross-border FRA). The following main functionalities are planned: • implementation of multilayer vertical split with increased number of ACC sectors open; • possible activation of larger number of areas and functionalities supporting tactical shortcuts; • improved activation and visualisation of alerts on ATCO display, following safety recommendations, supporting early conflict detection and resolution; • support to aircraft identification using Mode-S functionalities; • integration with TWR systems (electronic strips); • voiceless communication, communication directly with the application which will speed up ATCO work. A new contract with the system supplier was signed in Dec 2020. The contract value (higher by apr. 10 million PLN) includes new functionalities related to the improvement of the ATM system and the improvement of communication between P_21 and the implemented electronic flight strips (EFES tower system).							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	The scope of the upgrade project includes support for, but is not limited to, the following regulations: Regulation No 1207/2011, 1028/2014 and 2017/386 - Surveillance Performance & Interoperability (SPI) Regulation No 1206/2011 and 2020/587 - Aircraft Identification (ACID)						
	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	

Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)			• AF#3 - Flexible ASM and FRA o Sub-AF 3.2 Free Route Airspace					

Benefits for airspace users and results of the consultation of airspace users' representatives	Please see Annex E.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	Overhaul of existing system	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	The investment supports digitalisation and the overall idea of the Digital European Sky. It also supports the CNS optimisation/rationalisation as highlighted in the ATM MP (edition 2020). The investment is linked with the ATM MP L3 objectives such as AOM21.2 - Free Route Airspace - improved cross-border support, ITY-ACID - Aircraft Identification (related to reg. 1206/2011); And on top of this, it is linked with CP1, i.e.: AF#3: Flexible ASM and FRA o Sub-AF 3.2 Free Route Airspace (the project's functionality that leads to implementation of changes supporting cross-border OLDI shortcuts and thus being a pre-condition for cross-border FRA implementation).

Name of new major investment 10	***IT440732_MLAT_system_for_FIR_Warsaw***	Total value of the asset	***35 950 118,80 PLN***
Description of the asset	Implementation of MLAT system for FIR Warszawa – investment is an element of SUR modernisation and development in PANSA to ensure continuity of ANS through multiple radiolocation coverage in FIR Warszawa (in particular SUR for APP and better coverage for ACC) and to implement Mode-S functionalities. The following main functionalities are planned: • improvement of SUR coverage, especially for APP control at major airports, with required redundancy level (minimum of double coverage, supporting service continuity in case of radar failure or service/replacement activities); • Mode-S implementation; • support to ADS-B implementation in line with ADS-B implementation plan, optimising SUR infrastructure; • improved resilience interference, and improved coverage at lower altitude in hilly areas; • enabler for reduced separation in TMAs. The investment falls within the ATM MP (edition 2020) i.e. the Essential Operational Change concerning CNS infrastructure and services that seeks to optimize CNS infrastructure across Europe. The optimisation process should be consistent with the CNS Roadmap (as included in the ATM Master Plan), targeting a Surveillance architecture, with cost and spectrum efficiency, composed of ADS-B and a Minimal Operational Network including Mode S radars and Multilateration systems. The investment is also linked and supports the ADS-B implementation plan as elaborated by the SESAR Deployment Manager. As part of the RP3 PP revision, the schedule and scope of individual stages of the project were verified, taking into account, on the one hand, the need to postpone the costs incurred, and on the other hand, the experience of implementing the MLAT infrastructure in EPWA and the necessity to decommission obsolete radars operating significantly beyond the standard assumed operating life, as well as the assumption of successive achievement of operational benefits. There are some changes in the material scope and changes in the schedule of incurring expenses.		

The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the Single European Sky						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
							Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the single European sky	
Benefits for airspace users and results of the consultation of airspace users' representatives	Please see Annex E.							
Joint investment / partnership	No							
Investment in ATM systems	No							
If investment in ATM system, type?	Click to select	Not applicable.						
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	Not applicable.						

Name of new major investment 11	***IR470209_CWP_TWR***	Total value of the asset	***32 313 561,60 PLN***
Description of the asset	The CWP TWR project consists in the modernisation of TWR in FIR Warszawa in the scope of unifying working positions through the use of technology that allows the necessary minimum technical equipment to be left at workstations. The scope of the project has been exended as compared to initial RP3 assumptions. The figures above reflect the currently estimated CAPEX and related cost for the project and its value estimate was updated. Implementation of the CWP TWR project will enable remote data exchange in the future, based on free access to operational data obtained from various sources (a/c, airport, other airport, ultimately Network Manager and any other interested air traffic control unit), transmitted to the right places in real time. The following main functionalities are planned: • unification of the TWR working position; • minimising the number of technical devices in the TWR operating room (transferring them to the technical room), which will limit the number of technical interventions in the operating room; • adaptation for the implementation of modern air traffic management systems in the future; • facilitation of flexible change of ATCO roles at TWR, includingadding or merging positions; • the CWP will eliminate the need to add new equipment (monitors) when introducing and developing new systems (e.g. SMGCS) in the future. The project is set up to ensure full ATC provision up to and during the period of refurbishment. The project includes installation of full coverage ATC alternative facilities and contingency for all activities required to succesfully complete the project.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
	Network		

Level of impact of the investment	Local	Yes
	Non-performance	
Quantitative impact per KPA	Safety	Improvement of ATCO situational awareness due to simplification and unification of display systems. Minimizing the number of technical devices in the TWR operating room (transferring them to the technical room) will limit the number of technical interventions in the operating room. As a consequence, the number of working hours of the TWR controller in arduous conditions caused by the repair / maintenance of technical devices in the operating room will significantly decrease and the quality of service will be maintained even in case of installing additional devices.The unification of the TWR working position will allow for the continuity of work without the effect of the employee's initial adaptation to a different arrangement of the workplace. Facilitation of contingency provision between towers.
	Environment	
	Capacity	Facilitationof installation of ATC supporting systems and data exchange aimed at capacity maintenance/improvement - operating positions will be adapted to the implementation of modern air traffic management systems in the future. Unification and standardization od work stations will enable efficient role management at the operational position and afacilitates contingency plans, also between towers.
	Cost Efficiency	Elimination of future need to install additional displays for the purpose of new ATC support systems at TWRs - enabler to flexible software evolution. Support to flexible role management at TWRs and thereby efficiency in ATC personnel management, allowing avoidance of TWR ATCO increase. For quantitative impact of RP3 major investments (result of CBA analysis expressed in NPV) please see Annex E.
Results of the consultation of airspace users' representatives	Please see Annex E.	
Joint investment / partnership	No	
Investment in ATM systems	No	
If investment in ATM system, type?	Click to select	Not applicable.
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	The investment will support overall digitalization in ATM.

Name of new major investment 12	***IT430404_Server_Business_Infrastructure***	Total value of the asset	***25 985 556,32 PLN***
Description of the asset	The project includes server infrastructure that needs to be replaced or supplemented. Currently the project is directly related to the new ATM System in ATC centres and server business infrastructure (hard technical devices) for FIR Warszawa. The project covers purchase of the necessary server infrastructure for ATM system. In 2021 the new ATM system contractor in Platform Definition Document specified the hardware equipments necessary for its installation. As a result, there was a need to plan new specialized servers, matrices with software. The value of the project above reflect the estimated cost as detailed cost estimation is not yet available. The total value of assets increased, as a result of change currently it is as a major investment in the meaning of Regulation 2019/317. Final costs are not available yet, but to provide reliable estimation current value is based on information collected from the ATM system provider in 2021.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
Level of impact of the investment	Network		
	Local	Yes	
	Non-performance		
Quantitative impact per KPA	Safety	Benefits to be considered are the ones listed for new ATM system and modernization of ATM system above.	
	Environment	Benefits to be considered are the ones listed for new ATM system and modernization of ATM system above.	

Quantitative impact per KPA	Capacity	Benefits to be considered are the ones listed for new ATM system and modernization of ATM system above.
	Cost Efficiency	Benefits to be considered are the ones listed for new ATM system and modernization of ATM system above.
Results of the consultation of airspace users' representatives	Please see Annex E.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	New system	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	The investment will support overall digitalization in ATM. This investment shall be understood as an enabler for future virtualisation of systems and it fits into the ATM MP (2020 edition), in particular in the context of SESAR's vision towards a digital European sky. This project falls within/is consistent with the phase B of the SESAR vision towards the digital European sky that is to consist in an efficient services and infrastructure delivery through the launch of first ATM data services.

2.1.3 - Other new and existing investments

2.1.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

PANSA defined 6 programmes containing combined and separate deployment projects/ initiatives. Existing investments are dedicated to completing projects in progress, which aim to support the 4 KPAs (capacity, cost-efficiency, environment and safety) or to keep the business operations running/service continuity. The other investments (not listed under the main investments above) complement the new/major ones in the wider context of PANSA strategic plan, which aiming at transforming PANSA so that it is ready for the challenges stemming from the Single European Sky development. Other new and existing investments are related to replacement of equipment at life-end (often also upgrading the equipment taking into account European regulatory developments and technological developments), to infrastructure optimization, IT and rolling stock required to provide continuity of air navigation services.
The other new investments (totalling 429 368 819 PLN of CAPEX over RP3) include communication ground stations necessary for airspace developments aimed at capacity improvement, Traffic Complexity Tool development, DVOR/DMEs, ILs/DMEs, voice communication systems, WAN modernization, investments related to cybersecurity, virtual airport control towers (rTWR), radars etc.
- Facilities - many projects are already ongoing or will be launched during the RP3 period. These projects aim at either maintaining existing facilities in operational conditions or at building new facilities (towers, technical buildings) to replace obsolete ones. There investments will last during the RP3 period and beyond.
- Airspace projects - these are all the projects implementing new air navigation concepts, as well as all the airspace changes needed to provide optimum/high qiulity service and required capacity to all airspace users. There investments are ongoing and will last during the RP3 period and beyond.
- Wirtual control tower - development of a digital tower solution in order to prepare for future tower service provision model.
Large majority of these investments is related to capacity - either for ER traffic or in terminal airspace (84% of total PANSA RP3 CAPEX is related to the capacity KPA). Some investments are related to safety in the Polish airspace.
The planned investment projects include implementation of functionalities foreseen by the Common Project One and ATM Plan.
With regards to existing investments, they cover the depreciation costs and cost of capital related to projects implemented before RP3.

2.1.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	6

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	

1	IT430804_Radar_PSR/MSSR_Katowice	23 077 779	22 918 006	56	251	66 483	598 183	2 038 500	The project includes construction of radar facilities for the needs of approach control (with the possibility of using it also for area control) which should be implemented in 2024.
2	IP470810_Modernization_TWR_Wroclaw	18 680 002	18 494 998	7 042	133 202	646 809	1 205 479	1 321 489	The project concerns construction of additional two technical buildings beside the current TWR in Wroclaw. One of them would be a technical building for server room and workplace for technical personnel. The other one would serve as a guardhouse, power generator room, power switchboard. The project should be implemented in 2023.
3	IT480910_Radar_PSR/MSSR_Radom	18 002 704	18 002 704	0	385	384 514	1 495 546	1 989 652	The project includes construction of new radar facilites for the needs of approach control (with the possibility of using it also for area control) which should be implemented in 2023.
4	IA480139_A-SMGCS	22 474 701	22 474 701	0	22	169 627	499 828	1 132 584	The project includes new Radar SMR-2 at Warsaw Chopin Airport with supporting infrastructure, ASMGCS system (level 2+) with working positions for ATCOs in Warsaw Tower building, integration with other systems used by PANSA. Implementation is foreseen by the end of 2024. However, due to conditions related to the construction of the STH and the currently unknown scope of activity of Chopin Airport, possible alternative implementation formulas and the method of achieving the necessary functionalities are also considered, provided that they will allow for flexible adaptation to the changing needs of users depending on the scenarios, the construction schedule of STH and the future of Warsaw Chopin Airport. Final decision on the concept is pending.
5	IR470208_Virtualization_of_ATS_airport _services	19 022 413	22 413	0	0	0	0	530	The investment aims at integration of the existing systems operating independently within a single system (integration, processing and display of data from various sources). The system will provide data exchange necessary for ATCO/FIS work with technical and operational infrastructure. The project is directly related to the ATM system and EFES. As a result of the COVID-19 pandemic, the decrease in air traffic and the need to reduce capital expenditure, the tasks carried out under the project were verified, and internal resources possible to perform the task were identified. The project should be fully implemented after RP3.
6	IT460721_Modernization_of_the_network_infrastructure	19 424 627	8 541 032	50 058	372 056	883 839	1 372 978	1 792 547	The project includes modernization of the WAN network for FIR Warszawa, a new firewall in Warsaw, continuous replacement of access network architecture to CNS facilities. It covers preparation of the network for the migration of radio communication to VoIP transmission. It is expected to simplify the connection of potential new locations to PANSA network. The project is continued in RP3. It will be implemented in stages until the end of 2023 and after RP3.

2.2 - Investments - Institute of Meteorology and Water Management - National Research Institute (IMWM)

2.2.1 - Summary of investments

Number of new major investments	0

2.2.3 - Other new and existing investments

2.2.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

The new investments will allow for the alignment of current requirements for meteorological services in Europe with applicable data transmission standards, which in turn will unify products for airspace users. The investment in AWOS backup systems at selected airports will increase the safety of air operations in difficult weather conditions. Additional investments in AWOS infrastructure (i.e spare parts) will improve system reliability and will have a positive impact on the security and continuity measures of service provided. Involvement in the development of new products dedicated to the meteorological services used by ATC services will improve the decision making process which may significantly reduce the delays that result from suddenly changing weather conditions.

2.2.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	7

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	
1	Purchase of AWOS back up systems	1 296 000	1 296 000		46 953	400 334	407 453	417 432	Currently used AWOS get old and exploit. There is a high to need to secure servers stability and reliability. IMWM prepares for the purchase of back up systems one at a time. This investment is spread over the following years. Hardware modernization for 7 airports in Poland including seven sets of two servers (main and back-up, HPE DL360 Gen 10 8-SFF CTO); Additionally seven sets of Microsoft software for servers and workstations; MetConsole USB Hardlock; 45 workstations; 2 Spare servers (model HPE DL360 Gen 10)
2	Upgrading Aeronautical Meteorological Stations with ligting detectors	704 000	704 000		25 506	204 626	203 061	217 617	New investment carried out on the basis of the IMWM Management's decision to use the investment funds saved in the previous year. This investment results in AWOS hardware, software and terminal modernization. Ligting detectors provide a back up for PERUN system that is used by forecasters and observers (Polish lightning detection and location system). This investment was not included in IMWM's Business Plan for years 2021-2021 last updated in July 2021.

3	Modernization of currently used AWOS	1 000 000	1 000 000				305 257	337 525	Before purchasing back up systems some of currently used AWOS systems require neccesary modernization in order to work reliably.
4	Purchase of a new AWOS for Aeronautical Meteorological Station in Cracow	1 000 000	1 000 000				305 257	337 525	Currently used AWOS system requires to be exchanged completely.
5	Purchase of AWOS back up systems	2 000 000	2 000 000					675 049	IMWM plans to purchase of AWOS back up system in EPZG/ or EPPO
6	7 AWOS systems	9 353 944	9 353 944	2 174 249	2 027 708	1 717 650	994 944	1 534 173	7 AWOS systems purchased in 2016 - Katowice, Kraków, Gdańsk, Szczecin, Wrocław, Rzeszów, Łódź.
7	Other investments	3 217 000	3 217 000	314	114 243	231 424	473 148	346 135	Purchase of terminal servers, AWOS back up servers, infrared camers for Aeronautical Meteorological Stations, delivery of network switches to maintain the ICT infrastructure, power tools used by AWOS Service Department, licence for launching

2.3 - Investments - Radom Meteo sp. z o.o.

2.3.1 - Summary of investments

Number of new major investments	0

2.3.3 - Other new and existing investments

2.3.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

Radom Meteo does not plan any investments above 5M EUR in RP3. Other investments planned for RP3: Extension of the meteorological parameters measurement system AWOS to category II with the option of parameters measurement in 3 points - 3 point in the center of the runway measuring RVR. This investment will allow the operations to be carried out in accordance with Category II of ILS. After the extension, the AWOS system will measure among other things wind speed and direction, height of the cloud base and visibility along the all runway. This type of solution will significantly increase the safety of air traffic at the airport and it is necessary for the airport to receive higher security categories (CAT II). The planned extension of the AWOS system is compatible with the general plan for the development of the Radom-Sadków airport and is planned to be implemented in early 2023.

2.3.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	7

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	
1	AWOS - Software	270 000	268 380	0	0	0	58 736	62 531	For description, see 2.3.3.1.
2	AWOS - Equipments and servers	175 000	173 950	0	0	0	21 085	24 364	For description, see 2.3.3.1.
3	AWOS - Sensors	125 000	124 250	0	0	0	15 060	17 403	For description, see 2.3.3.1.
4	AWOS - Installation	120 000	119 280	0	0	0	14 458	16 707	For description, see 2.3.3.1.
5	Office equipment for Aerodrome Meteorological Office	90 000	89 460	0	0	0	10 844	12 530	For description, see 2.3.3.1.
6	Software for weathermen for preparing climatological information	135 000	134 190	0	0	0	29 368	31 266	For description, see 2.3.3.1.
7	Other minor investments (total)	Various	Various	72 456	51 248	28 185	0	0	Other new and existing investments.

2.4 - Investments - Warmia i Mazury sp. z o.o.

2.4.1 - Summary of investments

Number of new major investments	0

2.4.3 - Other new and existing investments

2.4.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

Warmia i Mazury does not plan any investments above 5M EUR in RP3.

Other investments planed for RP3:
Modernization of the existing teleinformation infrastructure - due to the technological progress and requirements concerning the installation of more modern, technologically advanced and guaranteeing security of radio communication systems for the ANS, it will be necessary to modernize the existing teleinformation infrastructure at the Olsztyn-Mazury Airport Control Tower. Replacement of the active devices (switches) will increase the level of reliability and availability of necessary network services, thus ensuring the security of the L2 layer at a higher level.
Warmia i Mazury also plans to purchase the technical vehicle - for the purpose of proper implementation of tasks related to the provision of air navigation services, together with service equipment, which is necessary for the radiocommunication measurements while in motion in the entire maneuvering area and outside the airport area, including systems distributed between TWR buildings and the Terminal.
Warmia i Mazury intends to increase the safety of AFIS provision, by purchasing the software, cameras and other remote equipment, which is planned to be funded in 75% by grants and subsidies in order to significantly limit the costs incurred by airspace users.

2.4.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	6

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	
1	Technical vehicle with equipment (COM)	290 000	290 000	0	17 753	69 345	66 676	64 006	The vehicle is essential for the radiocommunication measurements and proper provisions of ANS. Equipped with service accessories, it will enable performing quick repairs and the swift access to the server rooms which are located in two different places at EPSY airport due to safety reasons concerning data storage.

2	Extension and adaptation of Network Infrastructure (COM)	260 000	260 000	0	15 917	62 171	59 778	57 385	The investment is focused on the adaptation of the current infrastucure to the modern standards. These include changes of i.a. routers, converters, active devices (switches) and wiring. As far as cybersecurity is concerned, the NGFW (Next Generation Firewall) is planned to be installed, as well as the implementation of the systems enabling adaptation of the two independent Internet Service Providers to prevent any disruptions in network connection.
3	Extension of Surface-to-Air Radio Communication Systems (COM)	140 000	140 000	0	0	20 121	19 477	18 833	Changes of elements needed to ensure the continuity and reliability of the provision of ANS.
4	ICT Equipment to increase the safety of AFIS provision (AFIS)	6 000 000	1 500 000	0	0	0	0	401 823	Cameras, software and other remote equipment purchased in order to increase the safety of AFIS provision.
5	Other AFIS and COM investments (total)	Various	Various	159 335	152 810	104 586	98 558	102 005	Other investments (new and existing)
6	Other MET investments (total)	Various	Various	55 197	60 660	119 343	113 598	109 827	Other investments (new and existing)

2.5 - Investments - Port Lotniczy Bydgoszcz S.A.

2.5.1 - Summary of investments

Number of new major investments	0

2.5.3 - Other new and existing investments

2.5.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

PL Bydgoszcz does not plan any investments above 5M EUR in RP3. Other investments planed for RP3:

Investment name: Renovation and modernization of the tower of the former Military Airport with furniture, terrestrial communication equipment, teletechnical lines, water supply connection, as well as protection and access control system. Total cost on Bydgoszcz Airport side 3 900 000 PLN (investment is partially financed by Bydgoszcz Airport and partially by PANSA).
Investment justification: Air traffic control services (and ultimately AFIS services) currently work in a place that is only temporarily adapted to this type of functions, which was reflected in non-conformities resulting from inspections carried out by Polish CAA inspectors. The new tower will fulfill the requirements of supervision and control of air operations provided by air navigation services, i.e. AFIS, MET, which will increase the level of safety of the provided above services. It will enable the introduction of new technologies and procedures as a part of the efforts to integrate the services provided. PL Bydgoszcz plans to recover the costs incurred for the construction of the tower over a time of several reference periods. In connection with the above, as well as the fact that PL Bydgoszcz as an entity is legally responsible for ensuring the smooth and safe operation of the airport plans to carry out the above investment. As this building will be also used for ATC services provided by PANSA, it was agreed that PANSA will cover part of the total costs, while PL Bydgoszcz will cover the rest which amounts to 3 900 000 PLN (it will be 30% of costs, other 70% will cover PANSA).

2.5.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	3

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	
1	TWR EPBY Modernization	4 317 155	4 317 155	0	0	0	176 463	668 810	For details, see 2.5.3.1. The total asset value consist of 3 900 000 PLN of TWR modernization and 417 155 PLN of other supporting infrastructure.
2	Other AFIS investments (total)	Various	Various	27 881	24 254	25 852	23 967	22 859	Other investments (new and existing).
3	Other MET investments (total)	Various	Various	551 332	541 025	490 180	455 426	431 842	Other investments (new and existing).

SECTION 3: PERFORMANCE TARGETS AND MEASURES FOR THEIR ACHIEVEMENT

3.1 - Safety targets

3.1.1 - Safety KPI #1: Level of Effectiveness of Safety Management achieved by ANSPs

3.2 - Environment targets

3.2.1 - Environment KPI #1: Horizontal en route flight efficiency (KEA)

3.3 - Capacity targets

3.3.1 - Capacity KPI #1: En route ATFM delay per flight

3.3.2 - Capacity KPI #2: Terminal and airport ANS ATFM arrival delay per flight

3.4 - Cost efficiency targets

3.4.1 - Cost efficiency KPI #1: Determined unit cost (DUC) for en route ANS

En Route Charging Zone #x

3.4.2 - Cost efficiency KPI #2: Determined unit cost (DUC) for terminal ANS

Terminal Charging Zone #x

3.4.3 - Pension assumptions

3.4.4 - Interest rate assumptions for loans financing the provision of air navigation services

3.4.5 - Restructuring costs

3.4.6 - Additional determined costs related to measures necessary to achieve the en route capacity targets

3.5 - Additional KPIs / Targets

3.6 - Description of KPAs interdependencies and trade-offs including the assumptions used to assess those trade-offs

3.6.1 - Interdependencies and trade-offs between safety and other KPAs

3.6.2 - Interdependencies and trade-offs between capacity and environment

3.6.3 - Interdependencies and trade-offs between cost-efficiency and capacity

3.6.4 - Other interdependencies and trade-offs

Annexes of relevance to this section

ANNEX A. REPORTING TABLES & ADDITIONAL INFORMATION (EN-ROUTE)

ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL)

ANNEX F. BASELINE VALUES (COST-EFFICIENCY)

ANNEX H. RESTRUCTURING MEASURES AND COSTS

ANNEX M. COST ALLOCATION

ANNEX J. OPTIONAL KPIs AND TARGETS

ANNEX O. JUSTIFICATIONS FOR THE LOCAL SAFETY TARGETS

ANNEX P. JUSTIFICATIONS FOR THE LOCAL ENVIRONMENT TARGETS

ANNEX Q. JUSTIFICATIONS FOR THE LOCAL CAPACITY TARGETS

ANNEX R. JUSTIFICATIONS FOR THE LOCAL COST-EFFICIENCY TARGETS

ANNEX U. VERIFICATION BY THE NSA OF THE COMPLIANCE OF THE COST BASE

SECTION 3.1: SAFETY KPA

3.1 - Safety targets

3.1.1 - Safety KPI #1: Level of Effectiveness of Safety Management achieved by ANSPs

a) Safety national performance targets

b) Detailed justifications in case of inconsistency between local and Union-wide safety targets

c) Main measures put in place to achieve the safety performance targets

Annexes of relevance to this section

ANNEX O. JUSTIFICATIONS FOR THE LOCAL SAFETY TARGETS

3 - PERFORMANCE TARGETS AT LOCAL LEVEL

3.1 - Safety targets

3.1.1 - Safety KPI #1: Level of Effectiveness of Safety Management achieved by ANSPs

a) Safety performance targets

Number of Air Traffic Service Providers	3

		2020A Actual	2020 Target	2021 Target	2022 Target	2023 Target	2024 Target
PANSA	Safety policy and objectives	C	C	C	C	C	C
	Safety risk management	D	C	C	C	C	D
	Safety assurance	C	C	C	C	C	C
	Safety promotion	D	C	C	C	C	C
	Safety culture	D	C	C	C	C	C
	Additional comments						

		2020A Actual	2020 Target	2021 Target	2022 Target	2023 Target	2024 Target
Warmia i Mazury sp. z o.o.	Safety policy and objectives	C	C	C	C	C	C
	Safety risk management	C	C	C	C	C	D
	Safety assurance	C	C	C	C	C	C
	Safety promotion	C	C	C	C	C	C
	Safety culture	C	C	C	C	C	C
	Additional comments						

		2020A Actual	2020 Target	2021 Target	2022 Target	2023 Target	2024 Target
Port Lotniczy Bydgoszcz S.A.	Safety policy and objectives	C	C	C	C	C	C
	Safety risk management	C	C	C	C	C	D
	Safety assurance	C	C	C	C	C	C
	Safety promotion	C	C	C	C	C	C
	Safety culture	C	C	C	C	C	C
	Additional comments						

b) Detailed justifications in case of inconsistency between local and Union-wide safety targets

There is no inconsistency between local and Union-wide safety targets.

** Refer to Annex O, if necessary.*

c) Main measures put in place to achieve the safety performance targets

Since the beginning of the RP3 PANSA consequently and continuously improves safety. This can be confirmed by the Effectiveness of Safety Management (EoSM) indicator, which is still rising. Although the RP3 EoSM levels, based on CANSO Standard of Excellence, are higher than respective levels based on RP2 EASA questionnaire, the mentioned indicator in case of PANSA has already reached the targets set for the RP3.
Over 2020 PANSA continued implementation of improvements initiated in RP2 and consequently implemented measures listed in internal "SMS development roadmap".
The measures implemented in 2020 included:
- review and mapping of processes;
- safety culture review (results of which were implemented in the above mentioned SMS development roadmap);
- update of safety training modules for managerial level and continuation of safety trainings for PANSA employees;
- safety promotion (including quarterly publication of Safe Sky bulletin, information campaign preceding implementation of eTOKAI reporting system, publication of safety reports for FIR Warszawa);
- update of safety recommendations register to include new functionalities, implementation of new system for monitoring execution of safety requirements following from implementation of changes in functional system, initiation of works aimed at implementation of new Safety Assessment Information Tool;
- continuation of best practices exchanges with national and international organisations and entities.
Further developments are focused on achieving RP3 PP requirements and ensuring compliance with EU IR 2017/373.
Bydgoszcz Airport (EPBY) and Warmia i Mazury (EPSY) were included in performance scheme in 2020. Year 2020 was the first year, in which both ANSPs were assessed in terms of reaching safety targets set for RP3. In order to achieve assumed goals – EPBY and EPSY undertook numerous measures, among others:
- implementation of SMS related requirements, documents and procedures, compliant with national and international law, including development and maintenance of Safety Policy and Just Culture Policy,
- ensuring SMS training for all staff and contractors,
- appointment of Safety Manager, Safety Committee and Safety Review Board,
- regular organisation of Local Safety Meetings,
- development of safety management indicators,
- promotion of proactive attitude of the employees regarding safety in the organisation,
- conducting internal audit of the SMS and regular safety surveys,
- development of annual business plan containing information on safety related investements,
- sharing best practices, e.g. via SMS Data Exchange Forum etc.
Above EoSM targets levels for 2020 have not yet been verified by EASA. Therefore, they are set based on PL CAA assessment.

SECTION 3.2: ENVIRONMENT KPA

3.2 - Environment targets

3.2.1 - Environment KPI #1: Horizontal en route flight efficiency (KEA)

a) Environment national performance targets

b) Detailed justifications in case of inconsistency between national targets and national reference values

c) Main measures put in place to achieve the environment performance targets

Annexes of relevance to this section

ANNEX P. JUSTIFICATIONS FOR THE LOCAL ENVIRONMENT TARGETS

3.2 - Environment targets

3.2.1 - Environment KPI #1: Horizontal en route flight efficiency (KEA)

a) National environment performance targets

	2020A	2020	2021	2022	2023	2024
National reference values	*1,67%*	n/a	1,65%	1,65%	1,65%	1,65%

	2020	2021	2022	2023	2024
	Target	Target	Target	Target	Target
National targets	1,85%	1,65%	1,65%	1,65%	1,65%

b) Detailed justifications in case of inconsistency between national targets and national reference values

There is no inconsistency between local and Union-wide Environment targets.
For more information see Annex P.

** Refer to Annex P, if necessary.*

c) Main measures put in place to achieve the environment performance targets

FRA implementation within Warszawa FIR (POLFRA – implemented as of February 2019 from FL095, 24/7) is considered as a major step in facilitating improvement in the environment KPA.
Following implementation of POLFRA, over 2020 the following further changes aimed at offering the shortest possible routes to the airspace users were implemented:
– implementation of new FRA point LAJQU in POLFRA to allow shorter circumnavigation of military area D24Z (accommodating requests received from airspace users),
– implementation of new coordination FRA (Entry/Exit) point (POZUM) at PL/DE border in cooperation with DE/DFS – initially in 2020 made available for arrivals to EPWA and EPMO, over 2021 the use extended to other traffic,
– development of AFUA concept in Warsaw FIR, including implementation of reduced size of FBZ/Flight buffer zones from 5NM to 2.5 NM and reduced required tactical distance between segregated areas and GAT in en-route controlled airspace from 3.5 NM to 2.5NM.
Over 2020–2021 reorganisation of TMAs in Warsaw FIR took place, in order to allow Continuous Descent Approach (CDA) operations from more directions than available earlier. CDA techniques are also expected to reduce fuel consumption and CO2 emissions and improve cooperation with airports in order to reduce the nuisance of air transport for local communities.
Additional measures planned to be put in place over the remaining years of RP3 to further facilitate environmental improvements include the following:
1) Further implementation of AFUA concept in FIR Warszawa:
a. Improvement/automation of exchange of information about military activity in segregated areas, especially on tactical level. Update of coordination procedures and local ASM support tool/system which will reduce time required to release segregated areas back to civil traffic – 2021/2022;
b. Implementation of close cooperation between AMC Poland and FMP Warszawa in order to reduce as much as possible negative influence of segregated areas on civil traffic. Implementation of new coordination procedures taking into account forecasted demand of civil traffic on segregated airspace allocation in time on day of the operations – 2021/2022.
2) Development of FRA:
a. extension of POLFRA to TMAs with upper limit above FL195 (FRA to be implemented above FL195),
b. Implementation of cross-border FRA in FAB Baltic area – between ACC Warszawa and ACC Vilnius – 2022 (currently in validation phase and preparation for implementation),
c. Implementation of cross-border FRA operations between ACC Warszawa and ACC Bratislava to allow seamless FRA operations with South East, Central and North Europe – 2022,
d. Implementation of cross-border FRA between Baltic FAB and FAB DK-SE – 2023,
e. Possible implementation of cross-border FRA operations between Poland and possibly Ukraine (subject to further confirmation by BG and RO as well as analyses with respect to UA) – 2024 (Poland is also open to possible future development of cross-border FRA operations with FRACZECH – subject to outcome of further analyses and decisions on the CZ side),
3) Other airspace developments
a. Reorganisation of ACC Warsaw sector configuration following implementation of three layer division – this can reduce risk of negative impact of possible congestion in ACC sectors on the distance flown – phased implementation starting 2022/2023,
b. Cross-border coordination between Poland and Ukraine offering optimised trajectories between Middle East and Europe/North America. New trajectories can offer approximately 10 minutes of flight time savings. Additional savings in fuel consumption and CO2 emissions are expected.
In order to further reduce already one of the lowest values of KEA indicator among European ANSPs, the above initiatives were taken into account when establishing the revised RP3 target for Poland. However, it needs to be stressed that – despite the above initiatives – limited improvement of the horizontal en-route flight efficiency over the RP3 in Poland should be expected.

SECTION 3.3: CAPACITY KPA

3.3 - Capacity targets

3.3.1 - Capacity KPI #1: En route ATFM delay per flight

a) Capacity national performance targets

b) Detailed justifications in case of inconsistency between national targets and national reference values

c) Main measures put in place to achieve the target for en-route ATFM delay per flight

d) ATCO planning

3.3.2 - Capacity KPI #2: Terminal and airport ANS ATFM arrival delay per flight

a) Capacity national performance targets

b) Contribution to the improvement of the European ATM network performance

c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight

Annexes of relevance to this section

ANNEX Q. JUSTIFICATIONS FOR THE LOCAL CAPACITY TARGETS

3.3 - Capacity targets

3.3.1 - Capacity KPI #1: En route ATFM delay per flight

a) National capacity performance targets

	2020A	2020	2021	2022	2023	2024
National reference values	*0,00*	n/a	0,07	0,12	0,12	0,12

	2020	2021	2022	2023	2024
	Target	Target	Target	Target	Target
National targets	0,30	0,07	0,12	0,12	0,12

b) Detailed justifications in case of inconsistency between national targets and national reference values

There is no inconsistency between National reference value and National targets for 2021-2024. The local PIVOT VALUES for 2023–2024 will be developed based on latest European Network Operations Plan.

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the target for en-route ATFM delay per flight

PANSA has established a set of measures focused on the positive impact on the capacity performance in the following areas:
- the staffing area:
- the airspace area:
- the operations area.

For more information please see Annex Q.

** Refer to Annex Q, if necessary.*

d) ATCO planning

	Actual			Planning			
Warsaw (EPWW ACC)	2018	2019	2020	2021	2022	2023	2024
Number of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	7,00	6,00	1,25	5,25	10,00	6,00	5,00
Number of ATCOs in OPS planned to stop working in the OPS room (FTEs)	5,50	2,00	4,00	4,00	0,00	0,00	0,00
Number of ATCOs in OPS planned to be operational **at year-end (FTEs)**	170,75	174,75	172	173,25	183,25	189,25	194,25

Additional comments
Data presented in the above table include SUP ATM for all years (numbers for 2018–2019 were adjusted accordingly). COVID-19 pandemic and related traffic drop resulted in delay in the planned increase of ATCO as compared to initial 2019 draft RP3 PP (low traffic levels led to prolonged OJT training process). Moreover, over 2020 three ATCOs were moved to other duties (due to internal needs) and are now disclosed under PRU category 2 (ATCOs on other duties), although they continue to support OPS working part-time on duty (not included in the FTEs numbers in the table above). Following the pandemic outbreak, ATCO employment plans were revised and adjusted to currently predicted traffic levels for 2022+. The required number of ACC ATCOs was estimated using EUROCONTROL NEST tool. The estimates considered planned airspace developments, including multilayer division of airspace planned to be implemented in stages starting from 2022. They also take into account the fact that over RP2 ATCO number increase did not respond adequately to significant traffic growth – assuming that traffic in EPWW would be back to 2019 levels around 2024 – increase in ATCO numbers as compared to 2019 is required. It also needs to be stressed than NM under the NOP planning process for 2022+ advises ANSPs to consider scenario 1 of STATFOR May 2021 traffic forecast as the assumption for capacity planning. As there is a close link between capacity required to be provided and the resources available in this respect, this needs to be duly considered in ATCO numbers planning process. PANSA undertook measures aimed at increasing effectiveness of ATCO recruitment and training processes to ensure availability of required number of ATCOs. Details concerning ATCO employment plans were discussed during Consultation Meeting on 31 August 2021 and are provided in Annex C.

3.3.2 - Capacity KPI #2: Terminal and airport ANS ATFM arrival delay per flight

a) National capacity performance targets

	2020A	2020	2021	2022	2023	2024
	Actual	Target	Target	Target	Target	Target
National targets	0,02	0,45	0,02	0,21	0,24	0,23
Additional comments	Poland decided to establish the incentive scheme for the terminal capacity target only at the national level. The pivot value will be modulated for calculation of the capacity incentive scheme and limit the incentive to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. The forecast of terminal delays, prepared by PANSA, was based on data analysis and assumptions valid at the time of preparing the forecast, including terminal delays generated in the period from January to June 2021. The forecast of the delay rate has been prepared taking into account the baseline scenario 2 of the STATFOR forecast of May 2021. **As requested in paragraph no 29 of the Commission Decision (EU) 2022/779 dated 13 April 2022, Poland provided justification to the RP3 terminal capacity targets in Annex T.**					

Airport level	***EPWA-Chopina w Warszawie***	*0,04*	0,95	0,04	0,42	0,39	0,38
	Airport contribution to national targets						
	EPKK-Kraków-Balice	*0,04*	0,06	0,02	0,04	0,25	0,23
	Airport contribution to national targets						
	EPGD-Gdańsk im. Lecha Wałęsy	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EPKT-Katowice-Pyrzowice	*0,00*	0,02	0,00	0,02	0,16	0,11
	Airport contribution to national targets						
	EPWR-Wrocław-Strachowice	*0,00*	0,00	0,03	0,00	0,00	0,00
	Airport contribution to national targets						
	EPPO-Poznań-Ławica	*0,00*	0,08	0,00	0,11	0,10	0,09
	Airport contribution to national targets						
	EPRZ-Rzeszów-Jasionka	*0,00*	0,00	0,00	0,03	0,00	0,00
	Airport contribution to national targets						
	EPSC-Szczecin-Goleniów	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EPBY-Bydgoszcz	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EPMO-Warszawa/Modlin	*0,01*	0,24	0,00	0,37	0,34	0,31
	Airport contribution to national targets						
	EPLL-Łódź	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EPLB-Lublin	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EPZG-Zielona Góra-Babimost	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EPRA-Radom-Sadków	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EPSY-Olsztyn-Mazury	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						

b) Contribution to the improvement of the European ATM network performance

Warsaw Chopin Airport has been implementing the Airport Collaborative Decision Making (A-CDM) which will be highly contributing to the airport operations efficiency and to the European ATM network performance. Currently the A-CDM for EPWA is in the finalisation phase. It is planned to implement Target Start up Approval Time – TSAT Generator dedicated to optimise the time of the starting the aircraft engines based on the calculated Target off Block Time (TOBT).

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight

Planned change of the airspace structure in TMA Warsaw and an increased number of staff should result in a reduction of delays generated due to ATC Capacity from 2023. Together with the airspace structure changes and APP ATCO increase, PANSA plans to implement tools supporting ATCOs and allowing for capacity increase, including supporting operations in adverse weather conditions (A-SMGCS, ILS).
For more information please see Annex Q.

** Refer to Annex Q, if necessary.*

SECTION 3.4: COST-EFFICIENCY KPA

3.4 - Cost efficiency targets

3.4.1 - Cost efficiency KPI #1: Determined unit cost (DUC) for en route ANS

En Route Charging Zone #x

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

b) Information on the baseline values for the determined costs and the determined unit costs

c) Detailed justifications for the adjustments to the baseline values

d) Where a deviation from the Union-wide performance targets is observed, please indicate if the NSA considers those deviations to be necessary and proportionate

e) Main measures put in place to achieve the targets for determined unit cost (DUC) for en route ANS

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of

3.4.2 - Cost efficiency KPI #2: Determined unit cost (DUC) for terminal ANS

Terminal Charging Zone #x

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

b) Information on the baseline values for the determined costs and the determined unit costs

c) Detailed justifications for the adjustments to the baseline values

d) Main measures put in place to achieve the targets for determined unit cost (DUC) for terminal ANS

e) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of

3.4.3 - Pension assumptions

3.4.3.1 Total pension costs

3.4.3.2 Assumptions for the "State" pension scheme

3.4.3.3 Assumptions for the occupational "Defined contributions" pension scheme

3.4.3.4 Assumptions for the occupational "Defined benefits" pension scheme

3.4.4 - Interest rate assumptions for loans financing the provision of air navigation services

3.4.5 - Restructuring costs

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

3.4.5.2 Restructuring costs planned for RP3

3.4.6 - Additional determined costs related to measures necessary to achieve the en route capacity targets

a) Overall description of the measures necessary to achieve the en-route capacity targets for RP3, which induce additional costs

b) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3

c) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3 by nature by ANSP

d) Demonstration that the deviation from the Union-wide targets is exclusively due to the additional determined costs related to measures necessary to achieve the performance targets in capacity

Annexes of relevance to this section

ANNEX A. REPORTING TABLES & ADDITIONAL INFORMATION (EN-ROUTE)

ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL)

ANNEX F. BASELINE VALUES (COST-EFFICIENCY)

ANNEX H. RESTRUCTURING MEASURES AND COSTS

ANNEX M. COST ALLOCATION

ANNEX R. JUSTIFICATIONS FOR THE LOCAL COST-EFFICIENCY TARGETS

ANNEX U. VERIFICATION BY THE NSA OF THE COMPLIANCE OF THE COST BASE

NOTE: The following requirements as per Annex II, 3.3 are addressed in the Annexes A and B:

Point 3.3 (d) on cost-allocation;

Point 3.3 (e) on the return on equity and cost of capital;

Point 3.3 (f) on assumptions for pension costs and interest on debt for other entities, inflation forecast and adjustments beyong IFRS;

Point 3.3 (g) on adjustments to the unit rates carried over from previous reference periods;

Point 3.3 (h) on costs exempt from cost-sharing;

Point 3.3 (k) reporting tables and additional informations.

3.4 - Cost efficiency targets

3.4.1 - Cost efficiency KPI #1: Determined unit cost (DUC) for en route ANS

En Route Charging Zone #1 - Poland

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

En route charging zone Poland	Baseline 2014 2014 B	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2014 B	2024 D vs. 2019 B
Total en route costs in nominal terms (in national currency)	660 997 812	888 327 162	**1 602 947 276**	**875 857 917**	**914 029 458**	**950 341 024**	43,8%	7,0%
Total en route costs in real terms (in national currency at 2017 prices)	**664 844 905**	**866 715 620**	1 503 108 131	798 885 838	819 037 945	837 052 160	**25,9%**	**-3,4%**
Total en route costs in real terms (in EUR2017) [1]	156 256 514	203 701 586	353 271 019	187 759 755	192 496 044	196 729 872	25,9%	-3,4%
YoY variation			**73,4%**	**-46,9%**	**2,5%**	**2,2%**		
Total en route Service Units (TSU)	3 920 861	4 959 376	4 695 117	3 990 970	4 762 963	5 129 508	30,8%	3,4%
YoY variation			-5,3%	-15,0%	19,3%	7,7%		
Real en route unit costs (in national currency at 2017 prices)	**169,57**	**174,76**	**320,14**	**200,17**	**171,96**	**163,18**	**-3,8%**	**-6,6%**
Real en route unit costs (in EUR2017) [1]	**39,85**	**41,07**	**75,24**	**47,05**	**40,42**	**38,35**	**-3,8%**	**-6,6%**
YoY variation			83,2%	-37,5%	-14,1%	-5,1%		

National currency	**PLN**
[1] Average exchange rate 2017 (1 EUR=)	**4,25**

b) Information on the baseline values for the determined costs and the determined unit costs

En route charging zone Poland	Baseline 2014 2014 B	Baseline 2019 2019 B	Actuals 2014 2014 A	Actuals 2019 2019 A	2014 Baseline adjustments	2019 Baseline adjustments
Total en route costs in nominal terms (in national currency)	660 997 812	888 327 162	660 997 812	836 485 578	0	51 841 584
Total en route costs in real terms (in national currency at 2017 prices)	**664 844 905**	**866 715 620**	**664 844 905**	**814 956 767**	**0**	**51 758 853**
Total en route costs in real terms (in EUR2017) [1]	156 256 514	203 701 586	156 256 514	191 536 857	0	12 164 729
Total en route Service Units (TSU)	3 920 861	4 959 376	3 930 688	4 971 806	-9 827	-12 430

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2014 baseline value for the determined costs

Number of adjustments	0

c.2) Adjustments to the 2014 service units

	Coefficient M2/M3	Source	Service units
Impact of transition to actual route flown	-0,25%	CRCO correction factor May 2019 (on 12 months)	-9 827

Other adjustment to the 2014 service units	No

Total adjustments to the 2014 service units	-9 827

c.3) Adjustments to the 2019 baseline value for the determined costs

Number of adjustments	5

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
1	PANSA	ANSP	Cost of capital	49 059 170	49 059 170	11 530 230
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
2	Other ANSP	MET	Staff	952 597	921 940	216 681
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
3	Other ANSP	MET	Other operating	1 618 129	1 566 054	368 065
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #4	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
4	Other ANSP	MET	Depreciation	200 643	200 643	47 157
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #5	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
5	Other ANSP	MET	Cost of capital	11 045	11 045	2 596
Description and justification of the adjustment						
For details, see Annex F.						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	51 841 584	**-**	**-**

c.4) Adjustments to the 2019 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	-0,25%	CRCO correction factor May 2019 (on 12 months)	-12 430

Other adjustment to the 2019 service units	No

Total adjustments to the 2019 service units	-12 430

d) Description and justification of the consistency between local and Union-wide cost-efficiency targets

For details, see Annex R.

** Refer to Annex R, if necessary.*

e) Where a deviation from the Union-wide performance targets is observed, please indicate if the NSA considers those deviations to be necessary and proportionate under:

Additional costs of measures necessary to achieve the capacity targets for RP3	Yes	Detailed in part 3.4.6 of the performance plan
Restructuring costs planned for RP3	No	

f) Main measures put in place to achieve the targets for determined unit cost (DUC) for en route ANS

For details, see Annex R.

** Refer to Annex R, if necessary.*

g) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

With regard to the preparation of the PP all air navigation service providers, whose determined costs were included in the cost base for en-route charges were required to deliver necessary information with appropriate justification, confirming that determined costs are related to the provision of air navigation services as well as they are allocated in transparent way to the charging zones in respect of which they are incurred. The verification process, to the extent that it was carried out by NSA did not reveal any irregularities in terms of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317.

** Refer to Annex U, if necessary.*

3.4.2 - Cost efficiency KPI #2: Determined unit cost (DUC) for terminal ANS

Terminal Charging Zone #1 - Poland - EPWA

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

Terminal charging zone	Baseline 2019	RP3 revised cost-efficiency targets (determined 2020-2024)				2024 D
Poland - EPWA	2019 B	2020/2021 D	2022 D	2023 D	2024 D	vs. 2019 B
Total terminal costs in nominal terms (in national currency)	**44 978 601**	81 799 669	48 871 242	50 173 711	52 624 872	**17,0%**
Total terminal costs in real terms (in national currency at 2017 prices)	**43 749 207**	**75 884 885**	**44 037 508**	**44 320 933**	**45 668 485**	**4,4%**
Total terminal costs in real terms (in EUR2017) [1]	**10 282 246**	**17 834 998**	**10 350 004**	**10 416 617**	**10 733 328**	**4,4%**
YoY variation		73,5%	-42,0%	0,6%	3,0%	
Total terminal Service Units (TNSU)	107 857	98 511	87 356	96 630	103 108	-4,4%
YoY variation		-8,7%	-11,3%	10,6%	6,7%	
Real terminal unit costs (in national currency at 2017 prices)	**405,62**	**770,32**	**504,11**	**458,67**	**442,92**	**9,2%**
Real terminal unit costs (in EUR2017) [1]	**95,33**	**181,05**	**118,48**	**107,80**	**104,10**	**9,2%**
YoY variation		89,9%	-34,6%	-9,0%	-3,4%	

National currency	**PLN**
[1] Average exchange rate 2017 (1 EUR=)	**4,25**

b) Information on the baseline values for the determined costs and the determined unit costs

Terminal charging zone	Baseline 2019	Actuals 2019	2019 Baseline
Poland - EPWA	2019 B	2019 A	adjustments
Total terminal costs in nominal terms (in national currency)	44 978 601	44 126 045	852 556
Total terminal costs in real terms (in national currency at 2017 prices)	**43 749 207**	42 896 651	852 556
Total terminal costs in real terms (in EUR2017) [1]	10 282 246	10 081 872	200 374
Total terminal Service Units (TNSU)	107 857	107 857	0

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2019 baseline value for the determined costs

Number of adjustments	1

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
1.	PANSA	ANSP	Cost of capital	852 556	852 556	200 374
Description and justification of the adjustment						
For details, see Annex F.						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	852 556	**852 556**	**200 374**

c.2) Adjustments to the 2019 service units

Adjustment to the 2014 service units	Click to select

d) Description and justification of the contribution of the the local targets to the performance of the European ATM network

For details, see Annex R.

** Refer to Annex R, if necessary.*

e) Main measures put in place to achieve the targets for determined unit cost (DUC) for terminal ANS

For details, see Annex R.
As requested in paragraph no 47 of the Commission Decision (EU) 2022/779 dated 13 April 2022, Poland provided justification to the terminal cost-efficiency targets for RP3 in light of the observations set out in recitals 45 and 46 of above mentioned decision. For details see Annex T.

** Refer to Annex R, if necessary.*

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

With regard to the preparation of the PP all air navigation service providers, whose determined costs were included in the cost base for terminal charges were required to deliver necessary information with appropriate justification, confirming that determined costs are related to the provision of air navigation services as well as they are allocated in transparent way to the charging zones in respect of which they are incurred. The verification process, to the extent that it was carried out by NSA did not reveal any irregularities in terms of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317.

** Refer to Annex U, if necessary.*

3.4.2 - Cost efficiency KPI #2: Determined unit cost (DUC) for terminal ANS

Terminal Charging Zone #2 - Poland - Others

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

Terminal charging zone Poland - OTHER	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2019 B
Total terminal costs in nominal terms (in national currency)	**121 096 042**	260 288 740	149 058 558	150 166 336	149 863 037	**23,8%**
Total terminal costs in real terms (in national currency at 2017 prices)	**117 995 430**	**242 273 070**	**134 684 632**	**133 096 739**	**130 519 058**	**10,6%**
Total terminal costs in real terms (in EUR2017) [1]	**27 732 114**	**56 940 717**	**31 654 527**	**31 281 330**	**30 675 505**	**10,6%**
YoY variation		105,3%	-44,4%	-1,2%	-1,9%	
Total terminal Service Units (TNSU)	138 516	138 720	123 910	131 402	141 942	2,5%
YoY variation		0,1%	-10,7%	6,0%	8,0%	
Real terminal unit costs (in national currency at 2017 prices)	**851,85**	**1 746,49**	**1 086,95**	**1 012,90**	**919,52**	**7,9%**
Real terminal unit costs (in EUR2017) [1]	**200,21**	**410,47**	**255,46**	**238,06**	**216,11**	**7,9%**
YoY variation		105,0%	-37,8%	-6,8%	-9,2%	

National currency	**PLN**
[1] Average exchange rate 2017 (1 EUR=)	**4,25**

b) Information on the baseline values for the determined costs and the determined unit costs

Terminal charging zone Poland - OTHER	Baseline 2019 2019 B	Actuals 2019 2019 A	2019 Baseline adjustments
Total terminal costs in nominal terms (in national currency)	121 096 042	114 834 656	6 261 386
Total terminal costs in real terms (in national currency at 2017 prices)	**117 995 430**	111 822 410	6 173 020
Total terminal costs in real terms (in EUR2017) [1]	27 732 114	26 281 287	1 450 827
Total terminal Service Units (TNSU)	138 516	138 516	0

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2019 baseline value for the determined costs

Number of adjustments	9

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
1	Other ANSP	ANSP	Staff	1 199 766	1 161 155	272 903
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
1	Other ANSP	MET	Staff	548 588	530 933	124 784
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
3	Other ANSP	ANSP	Other operating	1 045 358	1 011 717	237 781
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #4	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
4	Other ANSP	MET	Other operating	-47 881	-46 340	-10 891
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #5	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
5	Other ANSP	ANSP	Depreciation	148 004	148 004	34 785
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #6	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
6	Other ANSP	MET	Depreciation	239 073	239 073	56 189
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #7	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
7	Other ANSP	ANSP	Cost of capital	32 335	32 335	7 600
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #8	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
8	Other ANSP	MET	Cost of capital	2 035	2 035	478
Description and justification of the adjustment						
For details, see Annex F.						

Adjustment #9	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
9	PANSA	ANSP	Cost of capital	3 094 108	3 094 108	727 199
Description and justification of the adjustment						
For details, see Annex F.						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	6 261 386	**6 173 020**	**1 450 827**

c.2) Adjustments to the 2019 service units

Adjustment to the 2014 service units	No

d) Description and justification of the contribution of the the local targets to the performance of the European ATM network

For details, see Annex R.

** Refer to Annex R, if necessary.*

e) Main measures put in place to achieve the targets for determined unit cost (DUC) for terminal ANS

For details, see Annex R.
As requested in paragraph no 47 of the Commission Decision (EU) 2022/779 dated 13 April 2022, Poland provided justification to the terminal cost-efficiency targets for RP3 in light of the observations set out in recitals 45 and 46 of above mentioned decision. For details see Annex T.

** Refer to Annex R, if necessary.*

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

With regard to the preparation of the PP all air navigation service providers, whose determined costs were included in the cost base for terminal charges were required to deliver necessary information with appropriate justification, confirming that determined costs are related to the provision of air navigation services as well as they are allocated in transparent way to the charging zones in respect of which they are incurred. The verification process, to the extent that it was carried out by NSA did not reveal any irregularities in terms of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317.

** Refer to Annex U, if necessary.*

3.4.3 - Pension assumptions

Polish Air Navigation Services Agency (PANSA)

3.4.3.1 Total pension costs (in nominal terms in '000 national currency)

Pension costs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pension costs	**54 911**	**76 537**	131 447	**81 099**	82 648	85 712
En-route activity	45 691	61 858	107 549	65 780	67 760	71 052
Terminal activity	8 395	13 596	21 991	14 047	13 758	13 655
Other activities	824	1 083	1 908	1 271	1 130	1 005

3.4.3.2 Assumptions for the "State" pension scheme (in nominal terms in '000 national currency)

Are there different contribution rates for different staff categories? If yes, how many?	Yes-2

All staff	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	420 964	378 244	799 208	457 116	468 018	495 988
Employer % contribution rate to this scheme	16	16		16	16	16
Total pension costs in respect of this scheme	**39 971**	**50 521**	**90 492**	**50 319**	**51 109**	**52 320**
Number of employees the employer contributes for in this scheme	1 898	2 006		1 975	2 022	2 013

Staff employed in special conditions (ATCO, "flying personnel")	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	225 743	179 994	405 737	213 042	228 448	253 919
Employer % contribution rate to this scheme	2	2		2	2	2
Total pension costs in respect of this scheme	**1 287**	**1 893**	**3 180**	**1 634**	**1 713**	**1 790**
Number of employees the employer contributes for in this scheme	613	618		636	648	660

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

The State pension scheme is defined in the Act of 13 October 1998 on social security scheme. It is a general occupational scheme applicable to all entities/all employees in Poland. The scheme is a Defined Contribution Scheme. This scheme defines level of obligatory contribution of employers to State pension scheme. This pension contribution amounts to 9.76% plus additional 6.5% for disability scheme - totalling 16.26% (employer's contribution only).
Additionally, for staff employed in special conditions (the list of staff categories is defined in Annexes to the Act of 19 December 2008 on bridging pension scheme), under the obligatory State scheme defined in the Act of 19 December 2008 on bridging pension scheme, employer pays 1.5% contribution to bridging pension scheme. In case of PANSA the staff employed in special conditions include personnel operating aircraft used for calibration flights (pilots and mechanics) and ATCOs.
At the moment of drafting the RP3 PP revision no drafts of proposed changes to the above national legislation on pensions are available - therefore the revised RP3 PP does not assume any changes.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

For the State pension scheme the costs assume the annual limit of contributions to State pension insurance applicable for 2021 in the amount of PLN 157.770, which in subsequent years was increased by inflation rate per annum calculated on the basis of the amount for 2021 (the limit is verified on annual basis by the State taking into account the level of monthly average salary in the Polish economy).
The following limits were assumed in the RP3 PP:
2021 - 157.770 PLN,
2022 - 166.930 PLN,
2023 - 171.156 PLN,
2024 - 175.435 PLN.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users

As the pension costs related to the State occupational scheme directly depend on the national legislation applicable to all entities, PANSA and the NSA have no control over the evolution of these costs if any change to the national legislation is implemented within RP3.
PANSA possible cost control mechanisms can only relate to the number of employees not exceeding the numbers foreseen in the RP3 PP and assumptions on remuneration level (sticking to the assumptions underlying the RP3 PP). PANSA is committed to following these assumptions on staff numbers and remuneration level as foreseen in the revised RP3 PP.

3.4.3.3 Assumptions for the occupational "Defined contributions" pension scheme (in nominal terms in '000 national currency)

Are there different contribution rates for different staff categories? If yes, how many?	Select

All staff (access for employees on voluntary basis)	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	195 028	344 606	539 634	416 364	426 093	451 464
Employer % contribution rate to this scheme	7	7		7	7	7
Total pension costs in respect of this scheme	**13 652**	**24 122**	**37 774**	**29 146**	**29 827**	**31 602**
Number of employees the employer contributes for in this scheme	1 573	1 756		1 759	1 752	1 763

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
The occupational pension scheme is based on the Act of 13 October 1998 on employee pension schemes. In case of introducing such scheme, it is necessary to sign a company contract - an agreement concluded by the employer with a representation of employees. Then it is possible for the employer to pay pension contribution to the scheme up to 7% for each employee registered to the scheme. Contribution in PANSA according to the company contract amounts to 7%. Contributions are collected and managed by AVIVA Insurance Company. In addition, employees have the right to determine the amount they want to contribute - the sum of additional contributions made by a participant to the scheme during a calendar year may not exceed the amount equivalent to four-and-a-half times the average projected monthly salary in the national economy for a given year. In 2020, the contribution was suspended for 6 months due to the need to maintain liquidity and reduce staff costs. This is considered as one-off measure following the crisis outbreak. No future changes are predicted.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
Calculations are made in the same way as in the case of contributions to the State pension scheme, except that there is no limit of contributions.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users
The pension costs related to this scheme are dependent on the number of employees and their salaries. Therefore, similar as in case of the State scheme described above, PANSA possible cost control mechanisms can relate to the number of employees not exceeding the numbers foreseen in the RP3 PP and assumptions on remuneration level (sticking to the assumptions underlying the RP3 PP). PANSA is committed to following these assumptions on staff numbers and remuneration level as foreseen in the revised RP3 PP. In case of unforeseen increase in the level of remuneration or number of staff, which could lead to significant increase in the costs of this pension scheme, PANSA has a possibility to limit the level of contribution or to suspend the scheme for a limited period (as exceptionally done in 2020).

3.4.3.4 Assumptions for the occupational "Defined benefits" pension scheme (in nominal terms in '000 national currency)

Does the ANSP assume liability for meeting future obligations for the occupational "Defined benefits" scheme?	No
Is the occupational "Defined benefits" pension scheme funded?	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Employer % contribution rate to this scheme						
Total pension costs in respect of this scheme			**-**			
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

Where, in the Reporting Tables, some occupational "defined benefits" costs (e.g. interest expense related to pensions) are reported in other cost item(s) than staff costs, the cost item(s) should be indicated here below along with corresponding explanations.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users

3.4.4 - Interest rate assumptions for loans financing the provision of air navigation services

Polish Air Navigation Services Agency (PANSA)

Select number of loans	2

Interest rate assumptions for loans financing the provision of air navigation services
(Amounts in nominal terms in '000 national currency)

Loan #1	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Operating credit facility provided by Bank Gospodarstwa Krajowego with agreed value of the arrangement amounting to 250 million PLN. Effective annual interest rate calculated taking into account: loan interest at floating rates - which is the total of the WIBOR 3M reference rate and bank's fixed margin of 0.95%, commission on the loan disbursement at 0.17% of full amount available, loan administration fee (on full amount made available) at 0.1% payable on a quarterly basis. Full amount available during the whole term of credit to be utilised and repaid according to PANSA needs. Final repayment until 31 Dec 2024.					
Remaining balance	64 501	149 432		129 432	5 432	-
Interest rate %	3,29%	3,29%		3,29%	3,29%	3,29%
Interest amount	90	2 340	2 431	5 470	3 850	1 419

Loan #2	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Investment credit to be provided by Bank Gospodarstwa Krajowego in planned amount amounting to 550 million PLN. Effective annual interest rate calculated taking into account: loan interest at floating rates - which is the total of the WIBOR 3M reference rate and bank's fixed margin of 1.6%, commission on every loan installment disbursement at 0.39% of the amount of installment concerned, commission on the unused expected maximum value of the arrangement at 1.0%, commission for issuing a State Treasury guarantee at 1.2% of full amount available payable immediately after arrangement conclusion. Expected maximum value of the Arrangement to be available in annual tranches within 2021-2023. The arrangement should be repaid until 31.12.2033.					
Remaining balance	0	190 000		351 000	494 000	439 000
Interest rate %	3,57%	3,57%		3,57%	3,57%	3,57%
Interest amount	0	1 707	1 707	9 144	17 206	17 465

Other loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description						
Remaining balance						
Average weighted interest rate %	-	-		-	-	-
Interest amount			-			

Total loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total remaining balance	64 501	339 432		480 432	499 432	439 000
Average weighted interest rate %	0,14%	1,19%		3,04%	4,22%	4,30%
Interest amount	90	4 047	4 138	14 614	21 056	18 884

3.4.5 - Restructuring costs

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

Restructuring costs from previous reference periods approved by the European Commission?	No

3.4.5.2 Restructuring costs planned for RP3

Restructuring costs foreseen for RP3?	No

Additional comments

3.4.6 - Additional determined costs related to measures necessary to achieve the en route capacity targets

Additional costs of measures necessary to achieve the capacity targets for RP3?	Yes
If yes, number of **en route** charging zones concerned	1

Polish Air Navigation Services Agency (PANSA)

a) Overall description of the measures necessary to achieve the en-route capacity targets for RP3, which induce additional costs

Information on measures planned to be implemented to support achievement of capacity targets is provided in chapter 3.3.1 and Annex Q of the revised draft RP3 PP.
These include, among others,
- reorganisation of ACC Warszawa sector configuration - three layer vertical division with improved resectorisation,
- reorganisation of TMAs for major Polish airports, including new sectors,
- continuation of training process for new ATCOs (required increase in ATCO numbers as a result of planned airspace changes),
- continued investments in infrastructure (CNS) and technology allowing for optimisation of airspace structures and optimisation of coverage in the Polish airspace as well as supporting resilience, scalability and flexibility of service provision,
- evolving ACC sector configurations to cope with updated traffic forecasts.

The above mentioned measures will generate additional costs in the areas of staff (ATCOs and ATCO students) as well as investments costs (depreciation and cost of capital on new CAPEX dedidacted to capacity KPA - as indicated in Annex E, ca. 84% of CAPEX planned for RP3 is related to capacity KPA).

b) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3

Number of capacity measures, which induce additional costs	2

ATCO increase	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	3 609	4 042	7 651	6 642	9 643	12 892

Description and justification of the additional determined costs of the measure

To be able to implement airspace resectorisation, including the three-layer vertical division, some increase in ATCO number is needed. This relates both to ACC ATCOs as well as APP ATCOs. Due to dynamic traffic increase over 2018-2019, PANSA faced insufficient number of ATCOs at the end of RP2 - this gap needs to be filled in over the RP3 perspective to support reaching the capacity targets over 2023-2024 as well as beyond. It needs to be stressed that reference values for Poland underlying the revised Union-wide capacity targets for RP3 are more ambitious than the initial ones from 2019 - this is reflected also in revised local capacity targets proposed in the revised Polish RP3 PP. This revised, very ambitious target of 0,12 min/flight cannot be met without the planned airspace resectorisation and required increase in ATCO numbers.
Increase in ATCO numbers results in increase in staff costs. For the purpose of calculating the additional costs related to this measure only costs related to employment of new ATCOs (salaries with related additional remuneration elements as well as social security payments) and their employment during the training period (during both, ab-initio training and on-the-job training) were taken into account - where as new ATCO only net increase above actual level at 31.12.2019 (end of RP2) was considered (replacements of ATCO leaving PRU1 were not considered in the calculations). The amounts presented in the table do not include other costs related to the ATCO training process like accommodation, costs related to recruitment of ATCO students, cost of trainers, cost of training materials or infrastructure used for training purposes or indirect costs - therefore the costs presented in the table need to be considered as very conservative.

Execution on investments related to capacity	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	1 389	14 435	15 825	29 309	43 825	58 212

Description and justification of the additional determined costs of the measure

Maintaining and further increasing ER capacity of FIR Warszawa requires investments in infrastructure and systems necessary to perform ANS by PANSA. Ca. 84% of PANSA RP3 CAPEX is related to capacity KPA. These investments include, among others, upgrades/changes to ATM system (PEGASUS-21 and subsequently iTEC), infrastructure needed to accommodate the new ATM system (iTEC), construction of new OPS rooms aimed at providing contingency and/or enabling capacity increase, development of radiocommunication stations required for implementation of three-layer vertical division of airspace or replacement/development of SUR infrastructure. They cover both, replacement investments (without which maintaining the capacity provided up-to-date would not be possible) as well as development investments (aimed at further improving capacity, both for the RP3 period and beyond) or projects considered as both replacement and development project (e.g. replacement of an asset or system but with additional functionalities added). Detailed information on investments over RP3 is provided in chapter 2.1 of the draft revised RP3 PP.
Execution of those investments results in increase in related costs - depreciation and cost of capital on fixed assets. For the purpose of calculating the values presented in the table above, only costs related to CAPEX to be spent over RP3 (from Jan 2020) allocated to ER services were considered - costs related to parts of the projects that started earlier (before end of RP2) were not considered. Again, similar as in the case of staff costs above, the amounts need to be considered as very conservative as they do not include non-capitalised cost elements related to CAPEX execution or putting the assets into operation like costs of business trips, additional training etc.

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	6 836	23 430	30 266	39 252	58 276	77 269

c) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3 by nature by ANSP

Additional costs of measures necessary to achieve the capacity targets for RP3 (nominal terms in '000 national currency)

Click to select	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff	3 609	4 042	7 651	6 642	9 643	12 892
of which, pension costs	510	619	1 129	1 047	1 516	1 916
Other operating costs			-			
Depreciation	0	10 464	10 464	17 363	24 345	30 802
Cost of capital	1 389	3 971	5 360	11 946	19 481	27 410
Exceptional items			-			
Total additional costs of measures	4 998	18 477	23 476	35 951	53 468	71 105

Click to select	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-			
of which, pension costs			-			
Other operating costs			-			
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total additional costs of measures	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	4 998	18 477	23 476	35 951	53 468	71 105

Additional comments

d) Demonstration that the deviation from the Union-wide targets is exclusively due to the additional determined costs related to measures necessary to achieve the performance targets in capacity

Local cost efficiency targets are consistent with the revised Union-wide performance targets fin the key performance area of cost-efficiency set in Commission Implementing Decision (EU) 2021/891. No deviation from Union-wide targets is observed.

SECTION 3.5: ADDITIONAL KPIS / TARGETS

3.5 Additional KPIs / Targets

Annexes of relevance to this section

ANNEX J. OPTIONAL KPIs AND TARGETS

3.5 - Additional KPIs / Targets

Number of additional KPIs	Click to select number of additional KPIs

SECTION 3.6: DESCRIPTION OF KPAS INTERDEPENDENCIES AND TRADE-OFFS INCLUDING THE ASSUMPTIONS USED TO ASSESS THOSE TRADE-OFFS

3.6 - Description of KPAs interdependencies and trade-offs including the assumptions used to assess those trade-offs

3.6 - Description of KPAs interdependencies and trade-offs including the assumptions used to assess those trade-offs

3.6.1 - Interdependencies and trade-offs between safety and other KPAs

a) Do the measures to reach the targets in the different KPAs require changes in the ANSP functional system that have safety implications? If yes, which mitigation measures are put in place?
Some of the measures foreseen to be implemented to support reaching the targets in the areas of capacity and environment, including FRA development plans and multilayer vertical split of airspace, will require changes in PANSA functional system. For such changes, prior to their implementation, safety assessment is performed and submitted to the NSA. Safety is considered a priority in implementation of any such changes. Safety assessment is performed under the Safety Management System in place at PANSA for all changes in the functional system and changes that have impact on that system. In such safety assessment all potential implications of the change for the safety area, as well as risks are identified and analysed. If the assessment indicates that the change might have any safety implications, then respective mitigation measures are planned to avoid any negative impact of the change on the safety area. Such measures may include for example restrictions introduced when implementing/developing FRA, reduced capacities of elementary sectors for new sectors after airspace reorganisation, dedicated trainings/briefings to staff etc.

b) What are the main assumptions used to assess the interdependencies between safety and other KPAs?
The main assumption for the interdependencies is that the level of safety required under the EU legislation shall not be compromised and impacted by the other performance areas.

c) What metrics, other than those indicators described in the Regulation, are you monitoring during RP3 to ensure targets in the KPAs of capacity , environment, and cost-efficiency are not degrading safety?
PL NSA analyses safety related occurrences within State Safety Programme/Plan and Safety Oversight Report. The inspection plan is developed as a risk based oversight programme.

d) Do targets allow trade-offs in operational decision making to managing resource shortfalls in order to preserve safety performance? Do targets restrict the release of staff for safety activities, such as training?
The trade-offs in operational decision making are sometimes unavoidable. The ambitious capacity targets may restrict the release of staff for safety training during the high season. However, these activities are not deleted but postponed and moved to low season.

e) Has the State reviewed the ANSP financial and personnel resources that are needed to support safe ATC service provision through safety promotion, safety improvement, safety assurance and safety risk management after changes introduced to achieve targets in other KPAs? Please, explain.
PL CAA inspectors review and supervise the ANSP personnel resources in accordance with regulatory requirements of the Commission IR (EU) 2017/373, ATM/ANS.OR.B.005 and ATS.OR.200.

3.6.2 - Interdependencies and trade-offs between capacity and environment

Several projects (airspace optimisation, route network straightening, DCT and FRA implementation) carried out by PANSA in the past few years allowed to improve HFE KPIs calculated for Polish (and Baltic FAB) airspace. Already Poland has one of the lowest KEA values in the SES area. Further improvement of HFE KPIs may cause reduction in capacity and/or throughput of EPWW FIR airspace. In complex airspaces with high demand, capacity is inversely proportional to flight routing efficiency. This is also confirmed by preliminary results of SESAR 2020 PJ06 project which is validating FRA concept in high and very high complexity environments. According to the mentioned results, when FRA is being implemented in complex airspaces with high demand it is necessary to introduce some “structural limitations” (which decrease flight efficiency) in order to maintain capacity, which can be affected by increased complexity (ATCO workload) and increased number of ACC sectors, which are penetrated by flights carried out on shortened routings. This situation will lead to increased regulation implemented on the day of operation. The outcome of these structural limitations is very often less penalising than the cost of ATM regulations.
Last significant implemented PANSA project (POLFRA) aimed to optimise flight efficiency was implementation of FRA in FIR EPWW on 28th of February 2019. Based on the above mentioned knowledge and performed analysis, in order not to decrease capacity of ACC Warszawa, POLFRA was implemented together with minimal set of necessary RAD restrictions. All these restrictions were implemented after precise analysis in order to minimise negative impact on users, while at the same time minimizing the risk of occurrence of ATM regulation implemented on the day of operation. Please also see the initial Poland RP3 PP dated 11.2019 (point 3.6.2) where results of PANSA analysis regarding high level estimation of potential negative results of withdrawing some of “structural limitations” of POLFRA were presented.
Another example of trade-offs between capacity and environmental targets could be the effect of previously planned but currently suspended enhanced NM Summer Measures. While at network level these measures are believed to bring positive effects for the level of delays, from the HFE perspective the led to negative effects linked to longer routes. This relationship was recognized also by EASA Management Board Task Force on Airspace Congestion.
Considering all mentioned above, PANSA is constantly trying to improve the HFE KPI values and improve capacity available for AUs. Recently three airspace projects are being developed in order to improve mentioned domains: cross-border FRA implementation projects (focused on HFE) and implementation of additional (third) sector layer in en-route airspace (focused on capacity).

Two cross-border FRA implementation projects are being developed now by PANSA:
- Baltic FRA – the common cross-border FRA are including cross-border FRA operations between Poland and Slovakia (Baltic FRA and SEE FRA) with planned implementation dates set to FEB 2022.
- Cross border FRA operations between Poland and Sweden (Baltic FAB and DK-SE FAB), planned for FEB 2023.
Both projects are focused on allowing AUs to plan freely via common border between Poland and Lithuania/Slovakia/Sweden, which will result in shorter, more optimise routings. Although some improvement of HFE could be expected, it also must be underlined that some structural limitations must be also applied in order not to decreases the available capacity.Already in 2018 PANSA noticed that capacity levels in south-east part of the Polish airspace is not enough to meet forecasted demand. Thus in 2019 the horizontal split of 2 ACC sectors was implemented. Although available capacity was increased and the delays were reduced that solution was foreseen as an intermediate step due to some operational constrains which increased complicity in that area. To further improve airspace configuration, minimise additional complexity and further increase available complexity forecasted for RP3 period (including the whole EPWW FIR area) the implementation of third layer of ACC sectors was initiated. The project was divided into 4 steps. The original plan was to start implementation of the first step in 2021 but due to the COVID-19 pandemic it was postponed to 2022. This project, although not directly focused on HFE improvement, also can indirectly contribute to the HFE by further minimisation of probability of delays. Thus AUs will not have to be forced to plan longer routings in order to avoid congested and regulated areas during peak summer periods.Additionally, in March 2020 PANSA has suspended a significant number of RAD restrictions related the Polish FRA area (POLFRA) due to the low level of traffic caused by COVID-19 pandemic and lack of capacity problems. As for June 2021 these restrictions are still being suspended at least until November 2021. Depending on traffic recovery their suspension might be prolongated. Undertaken actions could benefit in HFE optimisation, however although shorter connections were available, actual decrease of HFE KPIs has not been observed, because of AUs choices which in most cases take into account the cheapest routings, which are not necessarily the shortest ones, or because of some political factors.

3.6.3 - Interdependencies and trade-offs between cost-efficiency and capacity

There is a direct and widely recognised trade-off between these two areas. However, this relationship is not linear – the crisis period of 2020–2021 has shown that there is a minimum cost of ensuring service continuity and maintaining required capacity.
Capacity provision comes at cost. To be able to increase and even to maintain current capacity, ANSPs need financial resources allowing them to ensure availability of ATCOs and infrastructure/systems – these are the two most visible resources categories related to capacity provision. This also applies to situation, when ANSP encounters periodic traffic drop but in longer perspective traffic recovery and further traffic increase is expected – at such times, even with lower traffic, infrastructure/systems must be maintained operational and due consideration needs to be given to ensuring OPS staff availability when traffic recovers. This is the case over 2020–2021. ANSP has to be prepared to resume full operational capabilities once traffic returns. Having in mind that building operational capacity is a long lasting process (time required for ATCO training and for investments execution), operational capabilities cannot be decreased to a point where it would be impossible to return to the level of service required by the Airspace Users after the crisis. Without required financial resources ANSPs will not be able to ensure availability of ATCOs or technical staff maintaining infrastructure/systems. Similarly, lack of investments in new tools supporting ATCOs, new ATM system and CNS infrastructure would negatively impact provision of additional capacity. This concerns not only ER, but also investments at airports like ILS or A-SMGCS, which increase airport capacity in adverse weather conditions. For additional information on costs of additional capacity over RP3 please also see chapter 3.4.6 of the draft revised RP3 PP. Relationship between cost efficiency and capacity can also be measured by so called economic cost being total of financial costs invoiced to the airspace users and cost of delays. Reductions in ANSP financial costs can lead to significant increase in cost of delays, as a consequence negatively impacting the economic cost - with increasing cost for airspace users. For additional information on capacity cost over RP3 see also p. 3.4.6.

3.6.4 - Other interdependencies and trade-offs

Experience of Poland of RP2 indicates that there is also an interdependency between costefficiency and environment areas. In case of bordering charging zones with significant differences in unit rates, in times of relatively low fuel costs, aircraft operators might be willing to fly through 'cheaper' charging zones, even when this means longer routes. During RP2 these differences in the level of UR among the States were seen. The airspace users planned their most efficient route (not necessarily the shortest) and then performed flight on the shortest available routes. This practice has an impact also on ANSP overall performance in both cost-efficiency and environment areas.

Should additional space be needed for any of the items, please use Annex S.

SECTION 4: CROSS-BORDER INITIATIVES AND SESAR IMPLEMENTATION

4.1 - Cross-border initiatives and synergies

4.1.1 - Planned or implemented cross-border initiatives at the level of ANSPs

4.1.2 - Investment synergies achieved at FAB level or through other cross-border initiatives

4.2 - Deployment of SESAR Common Projects

4.3 - Change management

Annexes of relevance to this section

ANNEX N. CROSS-BORDER INITIATIVES

4.1 - Cross-border initiatives and synergies

4.1.1 - Planned or implemented cross-border initiatives at the level of ANSPs

Number of cross-border initiatives	4

Initiative #1	
Name	Local Traffic Complexity Management
Description	Objective: The Local traffic complexity management project is an instrument for automated and dynamic traffic forecasting and sectorisation planning that would provide support to local ATFCM and ATS units in the execution of tasks in order to enable efficient planning of capacity and staffing at PANSA/Oro Navigacija. The project would enable to run fast-time simulations that in turn would develop optimised sectorisation scenarios in terms of capacity parameters and ATCOs resources needs. The project will enable coordination between ANSPs and different stakeholders, in particular NM, AUs and MIL, airport operators/slot coordinator through collaborative decision-making processes. Status: Project is in implementation stage. PANSA/Poland and Oro Navigacija/Lithuania submitted project application in 2018 Q1, with was approved in November 2018. Project Grant Agreement was signed in December 2018. PANSA is planning to finish the implementation of local Traffic Complexity Tool in Q3 2021. Oro Navigacija/Lithuania started the formal withdraw process from the project financed under Grant Agreement in 2021. ATM MP links and EU legislation links: In accordance with the CP1 IR (EU 2021/116) and the Deployment Programme, ATM Functionality # 4 (Network Collaborative Management), including the SDP Project Family 4.4.2 (Traffic Complexity tools), is required to be deployed in the European Air Traffic Management Network (EATMN). ATM MP L3 2020 edition: ATC12.1 AF4 - Network Collaborative Management; SESAR Deployment Programme 2018: Family 4.4.2 - Traffic Complexity tools.
Expected performance benefits	Safety: Medium impact The project will enable more precise traffic forecasting leading to a significant reduction of overload situations and having positive impact on improved safety. The project will reduce operational human errors. Environment: Medium impact Reduced flight times and delays due to improved trajectory and network complexity assessment. Capacity:High impact The project will enable more precise traffic forecasting and traffic predictability, which will have positive impact on capacity increase and delay reduction in both en-route and terminal operations. Improved predictability is a consequence of better capacity utilisation. This improvement is mainly related to improved trajectory and network complexity assessment. Cost-efficiency: Low impact Increased ATCO productivity due to better allocation of resources to traffic thanks to traffic complexity assessment and EFD messages. Operational efficiency: Medium impact Reduced flight times and delays due to improved trajectory and network complexity assessment.

Initiative #2	
Name	iTEC/Convergence of ATM systems in the Baltic FAB ACCs and Cross-Borders Service provision with Joint Contingency Service Provision
Description	Objective: Objective of this project is to achieve ATM system convergence, which will be an enabler for several solutions aiming at achieving the optimal use of technical and human resources resulting in lower provision costs and improved operational performance in the Baltic FAB. It will be then possible, for two ANSP operating the same ATM system, to provide contingency ATM services for themselves. Status: Project is during the implementation phase. ATM MP links and EU legislation links / other links: L3: ATC02.8, ATC12.1, ATC17, ITY-AGDL, ITY-AGVCS2, ITY-FMTP EC Regulations: 373/2017; 552/2004 (amended by 1139/2018); ESSIP/LSSIP: All ESSIP/LSSIP ATC & ITY-xxx objectives related to ATM and COM systems; FOC< 2019 and IOC>2017 ATM Master Plan: All ATM MP OI steps with FOC< 2019 and IOC>2017 related to VLCN Network Strategy Plan: SO4.

Expected performance benefits	Safety: High impact Improved safety and controllers confidence while using complete set of Safety Nets, Conflict detection and monitoring aids available for 2015+ manufactured systems be offered by manufacturers (from 2018+). Environment: Low impact 1) System will support cross-border FRA contributing to ENV KPIs for horizontal fuel savings and corresponding reduction of CO2 emission; 2) System will be upgradable to future XMAN and thus capable to contribute future ENV KPIs most probably related to vertical fuel savings and corresponding CO2 emission and noise reduction. Capacity: High impact 1) Designed to support dynamic sectorization it will allow to deliver capacity on demand thus optimizing controllers workload while avoiding either overdelivery or underdelivery of the tactical capacity; 2) Air-Ground and Ground-Ground data exchange for seamless ATC coordination, dialog and transfer of communication means will allow to accommodate significant traffic growth/fluctuations without increasing the number of controlling sectors, protecting them from tactical overloads which may cause potential delays; 3) Interoperable with the airport systems to support A-CDM. Cost-efficiency: High impact. It will reduce equipment maintenance costs (other operating costs) and minimise the required installation of new upgrades and functions in existing ATC system. Operational efficiency: Medium impact Reduction in flight time and reduction in fuel burn.

Initiative #3	
Name	Enhancement of inter-FAB cooperation and cooperation with non-EU countries (FAB project)
Description	The main objective of cooperation is to drive progress towards greater flight efficiency, cost efficiency and operational consistency in line with Single European Sky performance goals. Status: Implementation phase is closed. Baltic FAB ANSPs will continue to seek for further possibilities of common actions in international environment in accordance with Baltic FAB Development Strategy. Project is a continuous activity. ATM MP links and EU legislation links: L3: AOM21.2, ATC02.8, ATC07.1, ATC12.1, ATC15.1, ATC15.2, ATC17 EC Regulations: SES Legislation ATM Master plan: "Regulatory roadmap". Particular activities: • Joint execution of the project based on ANSPs resources (financial, technical, HR), MoT, MoD, NSAs inkind contribution. ANSP activity was focused on cooperation within interFAB Cooperation platform and GATE ONE as well as on opportunities provided by joint participation in SESAR Deployment Manager (Common implementation of AGDL, participation in definition of DLS functionality B, iTEC), B4 Consortium (Pansa, Oro Navigacija, LPS and ANS CZ) and Centralised Services (PANSA, Oro Navigacija, Uksatse) projects.c • In 2017, PANSA and Oro Navigacija, signed a memorandum of cooperation with the Ukrainian air traffic agency UkSATSE. Under the memorandum, the parties will strive for intensive cooperation on aviation infrastructure development and airspace management, particularly in the area of the preparation and development of operating systems for air traffic control and the deployment of Free Route Airspace. • In 2018 a Memorandum of Cooperation between Baltic FAB ANSPs and Belaeronavigatsia, Belarusian Air Navigation Service Provider, Belaeronavigatsia was signed. The aim of the Memorandum of Cooperation between Baltic FAB and Belaeronavigatsia was to give a framework for potential future works on operational level. • By a bilateral agreement on cooperation, Oro Navigacija and PANSA formalized their cooperation in search and rescue (SAR) area signing the appropriate agreement in 2018. The two ANSPs are also planning to cooperate in joint trainings / exercises and exchange of best practice. • Also, meetings were held with Belarusian ANSP, Ukrainian ANSP, and Kaliningrad ANSP with the aim to discuss the optimisation of CNS. Numerous common activities prove that ANSPs in Baltic FAB consider its common presence as valuable tool to achieve benefits. Two abovementioned Memorandums of Cooperation signed between Baltic FAB ANSPs and non—EU ANSPs from Ukraine and Belarus partially cover cross-border activities: 1. MoC with Ukraine covers co-operation concerning the following areas: ▪ Cross border Free Route Airspace; ▪ Implementation and utilisation of GBAS/SBAS; ▪ Deployment and extension of AMHS network; ▪ Coordinated approach to DLS implementation; ▪ Safety and Quality; ▪ Implementation of common requirements applicable to ANSPs at EU level; ▪ GATE ONE; ▪ Baltic FAB ATM System. 2. MoC with Belarus covers cooperation concerning the following areas: ▪ cross border Free Route Airspace; ▪ implementation and utilisation of PBN; ▪ deployment and extension of AMHS network; ▪ coordinated approach to DLS implementation; ▪ surveillance Data Exchange; ▪ safety and quality; ▪ flight plan progress messages exchange.
Expected performance benefits	Low to medium in SAF, ENV and CAPACITY KPI. Not applicable to Cost-Efficiency.

Initiative #4	
Name	Free Route Airspace (FRA) and cross-border FRA
Description	Commission Implementing Regulation (EU) No 716/2014 of 27 June 2014 on the establishment of the Pilot Common Project supporting the implementation of the European Air Traffic Management Master Plan, obliged air navigation service providers to introduce an airspace based on direct routing from January 1, 2018 and Full-FRA from January 1, 2022. According to the abovementioned regulation, these solutions must be provided and come into service at and above FL310 in the ICAO EUR region (currently, in accordance with the CP1 Regulation EU 116/2021, at and above FL305). On the 28th of February, 2019, the Free Route Airspace (FRA) was officially implemented in the Polish airspace. The testing and validation phase was completed, which allowed PANSA to launch FRA in Warszawa FIR according to the schedule. Free Route Airspace in Poland is known as POLFRA. POLFRA is applied 24/7, above FL095 excluding TMAs. PANSA's future plans are to expand and improve the capability of POLFRA, working together with neighbouring ANSPs on the crossborder implementations (see chapter on Environment KPI). Current PANSA activities on FRA are aligned with currently applicable Regulation EU (116/2021) on Common Project One (CP1) which repealed the Regulation No 716/2014 – Family AF3, Sub-functionality on Free Route Airspace (3.1.2).
Expected performance benefits	POLFRA is in operation since end of February 2019 and positive impact is visible when looking at the shortest constrained route indicator, which improved from March 2019. In general, extension of FRA on cross-border basis with Lithuania and other States/FABs is expected to contribute to the objectives of the performance scheme in the Environment KPA, however, due to the fact that HFE is impacted by a number of external factors beyond control of ANSP (including military activities, weather, political issues) no significant reduction in KEA should be expected. Next steps of POLFRA development (see also the chapter on Environment KPI): • To extend POLFRA into cross-border FAB Baltic Free Route Airspace – project is under development with target implementation in 2022; • Extension of POLFRA/FAB Baltic FRA to cross-border FRA with already existing (or planned) FRA of neighboring FABs (e.g. DK-SE FAB, FABEC, FAB CE) and countries (e.g. Ukraine, Belarus). PANSA has started cross-border FRA project with Sweden (LFV) with target implementation date 2023. Additional comments: • FRA is included into the list of initiatives since the FRA is being extended to crossborder FRA project between PANSA and Oro Navigacija.

Additional comments
PANSA also actively participates in initiatives undertaken by the Network Manager aimed at supporting Network performance. Following support under the enhanced NM Summer 2019 Mesures over 2019, these include active participation in the Operational Excellence Programme, where PANSA acts as a Champion ANSP for WST 05 – Achievement of higher sector throughput as well as in Airspace Restructuring Programme.

4.1.2 - Investment synergies achieved at FAB level or through other cross-border initiatives

Details of synergies in terms of common infrastructure and common procurement
• New joint ATM system developed under the iTEC alliance, • Cooperation in project related to implementation of Local Traffic Complexity Tool, • Data sharing related to CNS infrastructure. This could include: o DVOR/DME Suwałki (replacement of existing DVOR/DME 'SUW' after resource period; this navaid may be potentially used for instrument procedures or RNAV coverage also on the territory of Lithuania); o DME Rudka (new DME which will be set instead of current DVOR/DME 'RUD'; planned location of new DME site is 52°55'36.1 N 023°05'16.3E (WGS-84); This navaid may be potentially used for RNAV coverage also on the territory of Lithuania); o Radar Gdańsk (new radar site close to Gdańsk (finally replacing current one); data from this radar may be potentially shared with SE ORO NAVIGACIJA).

4.2 - Deployment of SESAR Common Projects

4.2.1 - Common Project One (CP1)

CP1 ATM Functionality (CP1-AF) / Sub functionality (CP1-s-AF)	Recent and expected progress
CP1-AF1 - Extended AMAN and Integrated AMAN/DMAN in High-Density TMAs	
CP1-s-AF1.1 AMAN extended to en-route airspace	Poland outside the geographical scope of the Regulation 2021/116 on CP1.
CP1-s-AF1.2 AMAN/DMAN Integration	Poland outside the geographical scope of the Regulation 2021/116 on CP1.
CP1-AF2 - Airport Integration and Throughput	
CP1-s-AF2.1 DMAN synchronised with predeparture sequencing	Poland outside the geographical scope of the Regulation 2021/116 on CP1.
CP1-s-AF2.2.1 Initial airport operations plan (iAOP)	Poland outside the geographical scope of the Regulation 2021/116 on CP1.
CP1-s-AF2.2.2 Airport operations plan (AOP)	Warsaw airport added to the geographical scope of the Regulation 2021/116. There is not yet data available. Monitoring activities to be launched later this year.
CP1-s-AF2.3 Airport safety nets	Poland outside the geographical scope of the Regulation 2021/116 on CP1.
CP1-AF3 - Flexible Airspace Management and Free Route Airspace	
CP1-s-AF3.1 Airspace management and advanced flexible use of airspace	Family 3.1.1: ASM Tool to support AFUA - 100% Full deployment achieved; Performance gains: the primary scope/focus of the Family is KPA Capacity and KPA Safety: • it increases airspace capacity thanks to better airspace organisation and planning, • it leads to better situational awareness of airspace users, • it enhances Civil-Military ATM performance, • it provides real-time exchange of airspace management data, • it facilitates collaborative (civil-military) decision-making and improves safety. Family 3.1.2: ASM Management of real-time airspace data - Implementation in progress (75% achieved); the deployment target date: December 2021; Performance gains: the primary scope/focus of the Family is KPA Capacity: • it provides information about status of airspace reservation in order to optimise the use of airspace and increase capacity. Family 3.1.3: Full rolling ASM/ATFCM process and ASM information sharing - Implementation in progress (35% achieved); the deployment target date: December 2022; Performance gains: the primary scope/focus of the Family is KPA Capacity: • it will contribute to Network performance improvements and will support a better utilisation of Free Route Airspace and fixed route structure through enhanced ASM processes and tools, • it will contribute to enhance performance-driven ASM-ATFCM processes and will introduce more dynamic and flexible ASM/ATFCM/ATS processes. Family 3.1.4: Management of Dynamic Airspace Configurations - Implementation in progress (90% achieved); the deployment target date: December 2021; Performance gains: the primary scope/focus of the Family is KPA Capacity: it will enable dynamic sectorisation and therefore flexible Airspace Management within Polish airspace.
CP1-s-AF3.2 Free route airspace	Family 3.2.1: Upgrade of ATM systems to support DCTs and FRA - Implementation in progress (95% achieved); the deployment target date: December 2022; Performance gains: this Family embraces all four KPAs as defined in the Performance Scheme: PANSA projects that fall under this Project Families aim at deploying advanced operational concepts such as but not limited to extended information exchange with other systems / partners in a timely, coordinated and synchronized effort to raise capacity, improve safety and cutting costs and thus enabling a significant performance increase at PANSA; PANSA projects facilitate also Free Route Airspace utilization and Extended Arrival Management; while the projects support FRA utilization, they enable improved flight efficiencies in fuel and in time for the airspace users. Family 3.2.3: Implement Direct Routings (DCTs) - 100% Full deployment achieved; Performance gains: the primary scope/focus of the Family is KPA Environment; it enables improved flight efficiencies in fuel and in time for the airspace users thus, also reducing the environmental footprint of commercial aviation. Family 3.2.4: Implement Free Route Airspace (FRA) - 100 % Full deployment achieved; Performance gains: the primary scope/focus of the Family is KPA Environment; it enables improved flight efficiencies in fuel and in time for the airspace users thus, also reducing the environmental footprint of commercial aviation.
CP1-AF4 - Network Collaborative Management	

CP1-s-AF4.1 Enhanced short-term ATFCM measures	Family 4.1.1: STAM Phase 1 – 100% Full deployment achieved; Performance gains: the primary scope/focus of the Family is KPA Capacity: • it minimizes ATFCM delay by reducing the need for ATFCM regulations and its impact on operations, • it improves the balance between demand and available capacity through cooperation between ATFCM and ATS processes, through targeted measures on (an) individual flight(s), • it supports the network coordination between stakeholders and provides the network view for the elaboration, decision and execution of STAM measures, • it provides the collaborative environment to stakeholders during the elaboration, decision and execution of STAM measures; • it helps to plan optimum capacity and flight efficiency. Family 4.1.2: STAM Phase 2 - Implementation in progress (5% achieved); the deployment of the Family linked with the Family on Traffic Complexity Tool (TCT); STAM Phase 2 to be implemented via Local Tool (TCT) in B2B connection with the Network Manager; the deployment target date: December 2021; Performance gains: since this Family aims at further developing the STAM Phase 1 initiative, the primary scope/focus of the Family is KPA Capacity: it enables an optimised use of the available capacity by using realtime information about the network situation to identify and avoid 'hotspots' and reduce traffic complexity; Reduced flight time and holdings, owing to improved network predictability. The both Families (4.1.1 and 4.1.2) contribute also to cost savings and reduced fuel burn due to airspace users being able to fly their preferred trajectories, according to their priorities and operational objectives.
CP1-s-AF4.2 Collaborative NOP	Family 4.2.2: Interactive Rolling NOP - Implementation planned (0% achieved); ATFM procedures and staff training to be done when NM platform (N-Connect) is available; the deployment target date: December 2021; Performance gains: the primary scope/focus of the Family is KPA Capacity and KPA Safety; the Family will enable to improve ATCO workload predictability and prevent ATCOs overloads. the Family, once NM platform is available, will contribute to improving Network situational awareness and increasing operational CDM efficiency for all network stakeholders; it will help reduce flight time and flight holding due to improved network predictability. Family 4.2.3: Interface ATM systems to NM systems - 100% Full deployment achieved; Performance gains: this Family is of a horizontal nature and in fact embraces all four KPAs as defined in the Performance Scheme; it is focused on the collaboration improvement between NM, ANSPs, airports and airspace users in flight plan filing and processing. Family 4.2.4: AOP/NOP information sharing - Poland/no Polish stakeholder required to deploy this family in line with PCP.
CP1-s-AF4.3 Automated support for traffic complexity assessment	Family 4.3.1.Traffic Complexity Tools - Implementation in progress (20% achieved); the deployment target date: December 2021; Performance gains: the primary scope/focus of the Family is KPA Capacity: PANSA's projects falling under this Family are expected to bring the largest performance benefits in terms of capacity increase and reduction of delays both in en-route and terminal traffic; as concerns indirect impacts, the project will contribute to the following KPAs: • Safety: the project will enable more precise traffic forecasting leading to a significant reduction of overload situations and having positive impact on improved safety. • Predictability: The project will enable more precise traffic forecasting and traffic predictability that will have positive impact on capacity increase and delay reduction in both en-route and terminal operations. Improved predictability is a consequence of better capacity utilisation. This improvement is mainly related to improved trajectory and network complexity assessment. • Flight efficiency: Reduced flight times and delays due to improved trajectory and network complexity assessment. • Cost efficiency: Increased ATCO productivity due to better allocation of resources to traffic thanks to traffic complexity assessment and EFD (Electronic Flight Display) messages.
CP1-s-AF4.4 AOP/NOP integration	Warsaw airport added to the geographical scope of the Regulation 2021/116. There is not yet data available. Monitoring activities to be launched later this year
CP1-AF5 - SWIM	
CP1-s-AF5.1 Common infrastructure components	Family 5.1.1: PENS1: Pan-European Network Service version 1 - 100% Full deployment achieved; Performance gains: the primary scope/focus of the Family is KPA Cost-efficiency: a joint EUROCONTROL / ANSP led initiative to provide a common IP based network service across the European region covering voice and data communication and providing efficient support to existing services and new requirements that are emerging from future Air Traffic Management concepts, in particular in the context of SESAR (SWIM backbone). Family 5.1.2: NewPENS: New Pan-European Network Services – 100% Full deployment achieved; Performance gains: since the Family aims at replacing the PENS1, the primary scope/focus of the Family is also KPA Cost-efficiency through the multistakeholder nature of the initiative.

CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	Family 5.2.1: Stakeholder Internet Protocol Compliance - Implementation in progress (60% achieved); the implementation project (co-funded from EU funds) underway; the deployment target date: 2021; Performance gains: PANSA's project that falls under the Family is about splitting of operational and non-operational services that are based on network environment and thus contributes to improving network services for operational users by upgrading reliability and stability level (service continuity) and, ultimately, to KPA Safety. Family 5.2.2: Stakeholder SWIM Infrastructure Components - Implementation in progress (5% achieved); the implementation project (co-funded from EU funds) underway; the deployment target date: December 2024; Performance gains: PANSA's project that falls under the Family consists in improving reliability level for AMHS and upgrading AMHS functionality for Warsaw AMHS COM Center, thus contributing to service continuity and KPA Safety. Family 5.2.3: Stakeholders' SWIM PKI and cybersecurity - Implementation planned; PANSA is going to make use of solutions/best practices that will be developed in the framework of the multistakeholder project on SWIM Common PKI and policies & procedures for establishing of Trust Framework; the deployment target date: December 2024; Performance gains/description: the scope of activities under the Project families concerns cybersecurity aspects.
CP1-s-AF5.3 Aeronautical information exchange	Family 5.3.1: Upgrade/Implement Aeronautical Information - Implementation in progress (20% achieved); the deployment target date: December 2024; Performance gains/description: PANSA's activities within the Family will support the enhancement of security, data integrity and capacity, as well as promotion of ATM automation while making sure that the data quality is compatible with System Wide Information Management (SWIM) requirements; it will improve consistency, reliability and integrity of aeronautical data and information as well as the availability of quality-assured electronic terrain and obstacle data from authoritative sources.
CP1-s-AF5.4 Meteorological information exchange	Family 5.4.1: Upgrade/Implement Meteorological Information - Implementation planned (0% achieved); the implementation of the Family dependent on MET Service Provider activities in order to be able to consume services as provided by METSP; the deployment target date: December 2024.
CP1-s-AF5.5 Cooperative network information exchange	Family 5.5.1: Upgrade/Implement Cooperative Network Information Exchange System/Service - Implementation in progress (10% achieved); the deployment target date: December 2024; Project gains/description: Activities under this Family will be focused on initiating SWIM compliance and at developing/deploying new B2B services to exchange network / flight plan information between NM and operational stakeholders; the Family will contribute to KPA Capacity and KPA Safety.
CP1-s-AF5.6 Flight information exchange (yellow profile)	Family 5.6.1: Upgrade/Implement Flight Information Exchange System / Service supported by Yellow Profile - Implementation planned (0% achieved); the deployment target date: December 2024; Performance gains/description: this Family aims at upgrading or implementing Flight Information Exchange systems and services supported by the Yellow Profile in accordance with SWIM principles; the implementation of this Family requires an analysis of upgrades and new implementations of services to be performed, as well as the development of a concept on how to tackle the transition for this Family; this analysis shall include the development of a roadmap of the transition and the identification of the relevant artefacts (roadmap, services definition, Safety and Security framework, compliance framework); the transition concept is still awaited. Family 5.6.2: Upgrade/Implement Flight Information Exchange System / Service supported by Blue Profile - Implementation planned (0% achieved); please note that this area has been removed from the CP1.
CP1-AF6 - Initial Trajectory Information Sharing	
CP1-s-AF6.1 Initial air-ground trajectory information sharing	Family 6.1.1: ATN B1-based services in ATSP domain (CPDLC) - 100% Full deployment achieved; Performance gains: the primary scope/focus of the Family is KPA Capacity and KPA Safety: through the data-link communication, ATCOs' workload is substantially diminished which contributes to capacity and safety increase. Family 6.1.2: ATN B2-based services in ATSP domain - Implementation not planned yet (0% achieved); Low readiness Family; depending on ATN B2 services maturity, PANSA will later decide if it is feasible to upgrade current ATM system with ATN B2 services or if to postpone it until the future ATM system. Family 6.1.3: A/G and G/G Multi Frequency DL Network in defined European Service Areas - 100% Full deployment; Performance gains: the primary scope/focus of the Family is KPA Capacity and KPA Cost-efficiency: • it supports SDM in its activities according to the DLS Recovery Plan and defining a European DLS Common Governance. • it identifies steps towards the envisaged target solution in order to achieve the required performance needed to achieve full AF6 implementation. • it identifies the "Service Areas" and develops a design of the system architecture that will enable Data-link services provision in the most efficient way.
CP1-s-AF6.2 Network Manager trajectory information enhancement	A new theme in the CP1; The Network Manager required to deploy.
CP1-s-AF6.3 Initial trajectory information sharing ground distribution	A new theme in the CP1; There is not yet data available; monitoring activities to be launched later this year.

4.3 - Change management

Change management practices and transition plans for the entry into service of major airspace changes or for ATM system improvements, aimed at minimising any negative impact on the network performance
PANSA has a dedicated change management programme. Identification, initiation, assessment of the need for change, development of the change and the implementation of the change takes place in accordance with internal regulations in force at PANSA. There is a catalogue of changes requiring notification and/or approval of the President of the Civil Aviation Authority. The major changes may be proceeded as projects with additional internal PANSA procedures basing on modified management procedures specially created for PANSA. Every change takes a formal evaluation and risk assessment. Safety assessment is carried out, training support is provided to prepare the workforce to new types of tools and working methods. The process is continuously measured and monitored. Managers of all the units and leaders of the changes take part in recurring meetings where the progress is monitored. Impact is assessed, reviewed and mitigated during the process. Negative impact is minimised by close cooperation with specialists/practitioners and stakeholders during the change process and transition plans involve implementations in a limited environment that can include monitoring the operations in implementation phase and step by step introduction in lower traffic or higher workforce. For example during the introduction of POLFRA there were open days for stakeholders and the validations of flight plans involved all the major aircraft operators and CFSPS directly. To exclude the possible effect at the beginning of introduction the operational staff was increased and less workintensive system configurations were launched.

SECTION 5: TRAFFIC RISK SHARING ARRANGEMENTS AND INCENTIVE SCHEMES

5.1 - Traffic risk sharing parameters

- 5.1.1 Traffic risk sharing - En route charging zones
- 5.1.2 Traffic risk sharing - Terminal charging zones

5.2 - Capacity incentive schemes

- 5.2.1 - Capacity incentive scheme - Enroute
  - 5.2.1.1 Parameters for the calculation of financial advantages or disadvantages - Enroute
  - 5.2.1.2 Rationale and justification - Enroute
- 5.2.2 - Capacity incentive scheme - Terminal
  - 5.2.2.1 Parameters for the calculation of financial advantages or disadvantages - Terminal
  - 5.2.2.2 Rationale and justification - Terminal

5.3 - Optional incentives

Annexes of relevance to this section

- ANNEX G. PARAMETERS FOR THE TRAFFIC RISK SHARING
- ANNEX I. PARAMETERS FOR THE MANDATORY CAPACITY INCENTIVES
- ANNEX K. OPTIONAL INCENTIVE SCHEMES

5.1 - Traffic risk sharing

5.1.1 Traffic risk sharing - En route charging zones

Poland			Traffic risk-sharing parameters adapted?			no
			Service units lower than plan		Service units higher than plan	
	Dead band	Risk sharing band	% loss to be recovered	Max. charged if SUs 10% < plan	% additional revenue returned	Min. returned if SUs 10% > plan
Standard parameters	±2,00%	±10,0%	70,0%	5,6%	70,0%	5,6%

5.1.2 Traffic risk sharing - Terminal charging zones

Poland - EPWA			Traffic risk-sharing parameters adapted?			no
			Service units lower than plan		Service units higher than plan	
	Dead band	Risk sharing band	% loss to be recovered	Max. charged if SUs 10% < plan	% additional revenue returned	Min. returned if SUs 10% > plan
Standard parameters	±2,00%	±10,0%	70,0%	5,6%	70,0%	5,6%

Poland - Others			Traffic risk-sharing parameters adapted?			no
			Service units lower than plan		Service units higher than plan	
	Dead band	Risk sharing band	% loss to be recovered	Max. charged if SUs 10% < plan	% additional revenue returned	Min. returned if SUs 10% > plan
Standard parameters	±2,00%	±10,0%	70,0%	5,6%	70,0%	5,6%

5.2 - Capacity incentive schemes

5.2.1 - Capacity incentive scheme - Enroute

5.2.1.1 Parameters for the calculation of financial advantages or disadvantages - Enroute

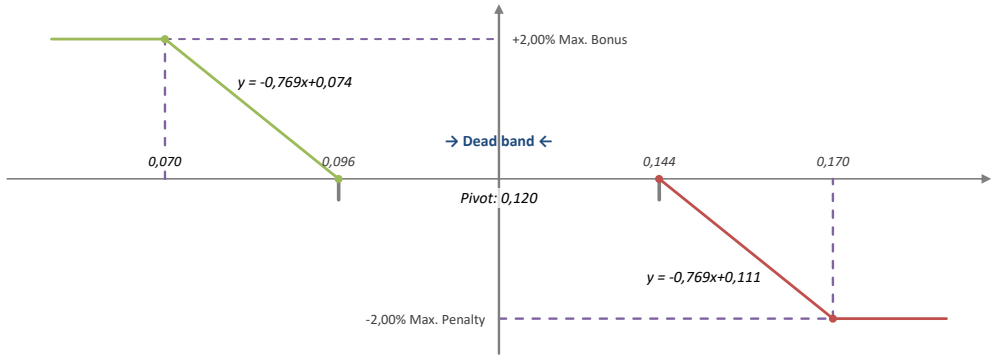
Enroute	Expressed in	Value
Dead band Δ	%	±20%
Max bonus (≤2%)	*% of DC*	2,00%
Max penalty (≥ Max bonus)	*% of DC*	2,00%
The pivot values for RP3 are	modulated	

Polish Air Navigation Services Agency (PANSA)

		2020	2021	2022	2023	2024
NOP reference values (mins of ATFM delay per flight)				0,12	0,12	0,12
Alert threshold (Δ Ref. value in fraction of min)				±0,050	±0,050	±0,050
Performance Plan targets (mins of ATFM delay per flight)				0,12	0,12	0,12
Pivot values for RP3 (mins of ATFM delay per flight)*				0,12		
Financial advantages / disadvantages	Dead band range			[0,096-0,144]	[0-0]	[0-0]
	Bonus sliding range			[0,07-0,096]	n/a	n/a
	Penalty sliding range			[0,144-0,17]	[0-0,05]	[0-0,05]

** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the November n-1 NOP and the methodology described in 5.2.1.2.a2 below. The pivot values for year n have to be notified to the EC by 1 January n.*

Application of the en route incentive scheme in year 2022 (before any revision of the NOP reference values)



5.2.1.2 Rationale and justification - Enroute

Indicate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:	
a) In order to enable significant and unforeseen changes in traffic to be taken into account:	
a.1) The pivot value for year n IS the reference value from the November release of year n-1 of the NOP.	Yes
a.2) The pivot value for year n is informed by the November release of the year n-1 of the NOP and calculated according to the following principles and formulas:**	No
b) The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision and an explanation of how the pivot values are calculated.	No

*** Refer to Annex I, if necessary.*

5.2.2 - Capacity incentive scheme - Terminal

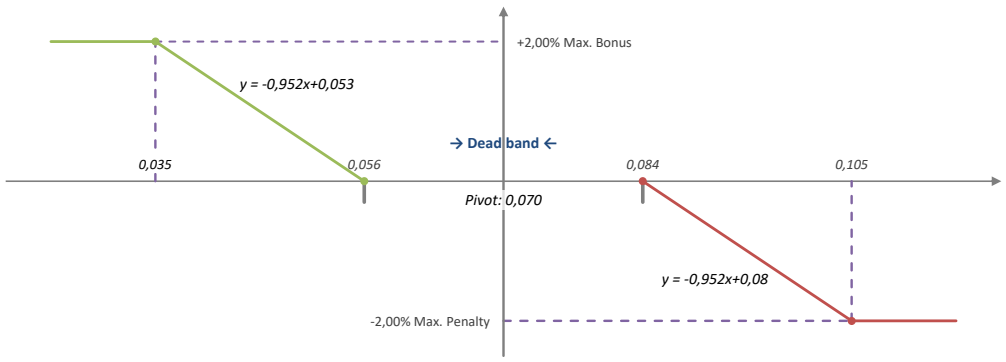
5.2.2.1 Parameters for the calculation of financial advantages or disadvantages - Terminal

Terminal	Expressed in	Value
Dead band Δ	%	±20,0%
Bonus/penalty range (% of pivot value)	%	±50%
Max bonus	% of DC	2,00%
Max penalty	% of DC	2,00%
The pivot values for RP3 are	modulated	

		2020	2021	2022	2023	2024
Performance Plan targets (mins of ATFM delay per flight)				0,21	0,24	0,23
Bonus/penalty range Δ (in fraction of min)				±0,035	±0,000	±0,000
Pivot values for RP3 (mins of ATFM delay per flight)*				0,07		
Financial advantages / disadvantages	Dead band range			[0,056-0,084]	[0-0]	[0-0]
	Bonus sliding range			[0,035-0,056]	n/a	n/a
	Penalty sliding range			[0,084-0,105]	[0-0]	[0-0]

** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the methodology described in 5.2.1.2.a below. The pivot values for year n have to be notified to the EC by 1 January n.*

Application of the terminal incentive scheme



5.2.2.2 Rationale and justification - Terminal

Explain how the bonus and penalties are going to be apportioned between the different terminal charging zones and ANSPs providing services in each of them**
The target in terminal capacity area was set on national level. The financial advantage or disadvantage from those incentive schemes shall be calculated on as a 0,5 % of the terminal determined costs of year n of PANSA and recovered from (reimbursed to) airspace users through an increase (reduction) of unit rate respectively in year n+2.

*** Refer to Annex I, if necessary.*

Indicate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:	
a) The pivot value for year n is modulated in order to enable significant and unforeseen changes in traffic to be taken into account and is based on the principles explained below:**	No
b) The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision and an explanation of how the pivot values are calculated.	Yes
Based on the experience form RP2 most of the terminal delays causes are not related to ATM/ANS, but weather or airport conditions (a similar situation should be expected in the following years of RP3, after the return of the traffic). In this case ANSPs should not bear financial consequences in the form of penalties/bonuses resulting from the factors beyond their control. For more details see Annex I.	

*** Refer to Annex I, if necessary.*

5.3 - Optional incentives

Total maximum bonus for all optional incentives (≤2%):	0,0%	Total maximum penalty for optional incentives (≤4%):	0,0%

Number of optional incentives	Click to select

SECTION 6: IMPLEMENTATION OF THE PERFORMANCE PLAN

6 - IMPLEMENTATION OF THE PERFORMANCE PLAN

6.1 Monitoring of the implementation plan

Description of the processes put in place by the NSA to monitor the implementation of the Performance Plan including the yearly monitoring of all KPIs and PIs defined in Annex I of the Regulation and a description of the data sources
Based on Article 37, Regulation (EU) 2019/317) Polish NSA is obliged to carefully monitor the implementation of the revised Polish Performance Plan for RP3. Polish NSA has prepared the monitoring activities to cover the following areas: - investment plan (CAPEX) execution, - execution of planned costs, - use of public funding, including EU funding, - execution of employment plan, - execution of staff training plan, - ATCO productivity, - implementation of major projects aimed at increasing capacity and enhancing flight efficiency, - implementation of corrective measures in the safety area. The scope of the selected areas was chosen taking into account airspace users' remarks, as well as CAA own assessment of the relevant elements of the performance plan. The CAA is going to continue the preparation of the CAA's report for the airspace users. Polish CAA proposes to maintain the monitoring exercise during RP3 with the adjustment of the scope and frequency of the information received from ANSPs, taking into account that the scope of the information from smaller institutions may not necessarily be the same as from PANSA. Additionally, CAA is obliged to perform the process of continuous oversight of all ANSPs as it is stated in the Regulation 2017/373. These monitoring activities at the national level includes ANSP's business and annual plans and their consistency with the PP. All the above supervision exercise will give the CAA the knowledge on the ANSPs Performance and will facilitate identification of any threat concerning reaching of alert thresholds (in accordance with Article 18, Reg. (EU) 2019/317) and other obligatory requirements determined within Annex VI, Regulation (EU) 2019/317 and other relevant legislation (especially Regulation (EU) 2017/373). The monitoring of progress in achieving performance targets set in Regulation (EU) 2019/317 shall be performed by dedicated Polish NSA inspectors. The cooperation with neighbouring NSAs is already established and will be used accordingly if needed. Polish CAA in cooperation with Network Manager will prepare the annual Monitoring Report for the Republic of Poland and after approval will submit it to the European Commission via PRB until 1st June of every year of RP3 at the latest. In Polish CAA opinion the monitoring described above will give CAA the necessary information to react in advance when the risk of not reaching the targets will be identified.

6.2 Non-compliance with targets during the reference period

Description of the processes put in place and measures to be applied by the NSA to address the situation where targets are not reached during the reference period
In case a target is not met at national level, the NSA PL shall identify potential issues, apply corrective measures designed to correct the situation and subsequently inform the European Commission in accordance with Art. 37 of the Regulation (EU) 2019/317. Based on all the inputs, NSA in cooperation with Network Manager will prepare annual Monitoring Report for the Republic of Poland and after its approval will submit it to the European Commission via PRB until 1st June of every year of RP3 at the latest. The monitoring exercise described above will give CAA the necessary information to react in advance when the risk of not reaching the target will be identified. This prudent approach shall minimise the risk of the situation when targets are not reached (in case when the situation is caused by the circumstances under ANSPs' control).

7 - ANNEXES

ANNEX A. REPORTING TABLES & ADDITIONAL INFORMATION (EN-ROUTE)

ANNEX A.x - En route Charging Zone #x

ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL)

ANNEX B.x - Terminal Charging Zone #x

ANNEX C. CONSULTATION

ANNEX D. LOCAL TRAFFIC FORECASTS

ANNEX E. INVESTMENTS

ANNEX F. BASELINE VALUES (COST-EFFICIENCY)

ANNEX G. PARAMETERS FOR THE TRAFFIC RISK SHARING

ANNEX H. RESTRUCTURING MEASURES AND COSTS

ANNEX I. PARAMETERS FOR THE MANDATORY CAPACITY INCENTIVES

ANNEX J. OPTIONAL KPIs AND TARGETS

ANNEX K. OPTIONAL INCENTIVE SCHEMES

ANNEX L. JUSTIFICATION FOR SIMPLIFIED CHARGING SCHEME

ANNEX M. COST ALLOCATION

ANNEX N. CROSS-BORDER INITIATIVES

ANNEX O. JUSTIFICATIONS FOR THE LOCAL SAFETY TARGETS

ANNEX P. JUSTIFICATIONS FOR THE LOCAL ENVIRONMENT TARGETS

ANNEX Q. JUSTIFICATIONS FOR THE LOCAL CAPACITY TARGETS

ANNEX R. JUSTIFICATIONS FOR THE LOCAL COST-EFFICIENCY TARGETS

ANNEX S. INTERDEPENDENCIES

ANNEX T. OTHER MATERIAL

ANNEX U. VERIFICATION BY THE NSA OF THE COMPLIANCE OF THE COST BASE

ANNEX Z. CORRECTIVE MEASURES*

** Only as per Article 15(6) of the Regulation*