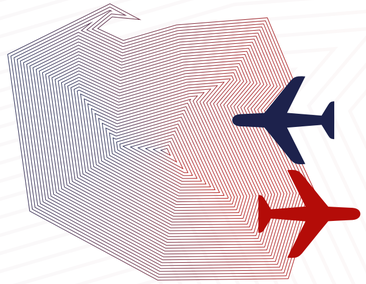
#wac2019PANSA

Polish Air Navigation Services Agency at World ATM Congress 2019

Gateway to Europe
Gateway to the East

stand #239

Gateway to Europe Gateway to the East



PANSA for the first time at WAC

The most famous ATM congress event – WAC – this year, as usual, will take place in Madrid.

WAC combines conference style debates between the most influential representatives of Air Navigation Service Providers (ANSPs), product developers, experts, operational stakeholders and international ATM exhibition where their solutions for the current and upcoming challenges in the Air Traffic Management are demonstrated.

This year's, 7th edition will take place on 21,000 square metre venue with almost 240 display stands from over 130 countries.

PANSA representatives have been attending every WAC for the last seven years. But this time PANSA will be one of the exhibitors in Madrid.

From 12th until 14th March PANSA will moderate discussions about Central and Eastern Europe role within the ATM, as well as the challenges and opportunities for the unmanned aircraft use. What is more, in-house designed ATM systems will be presented during the event and will cover PANSA's own R&D projects, such as PANSA UTM, PANDORA and CAT.

Visit our stand #239

pansa

Mikołaj Wild
Secretary of State in the Ministry of Infrastructure, Plenipotentiary of the Government for the Central Transport Hub for the Republic of Poland

We are now in a key moment for Polish aviation. We observe a record-breaking (and still increasing) number of passengers, as well as dynamically growing air traffic that is significantly ahead of the forecasts. As the Polish airspace is one of the largest in Europe, we are aware of our influential role in the entire air traffic management system. That is why we are preparing for the new challenges: we undertook the task of building the Central Transport Hub, we invest in new technologies and amend our regulations.

Henrik Hololei
Director-General for Mobility and Transport, European Commission

PANSA is a pro-active partner in the European Union's efforts to modernize air traffic management. As a contributor to SESAR – the most successful public-private partnership in the aviation sector ever – PANSA has shown its commitment to accelerate deployment of innovative technologies for improved ATM performance. I am delighted that PANSA is joining the World ATM Congress this year, representing air navigation services within the Polish airspace.

Janusz Janiszewski
Acting President of the Polish Air Navigation Services Agency

PANSA's motto for this year's WAC edition is: **Gateway to Europe, gateway to the East**.
In order to face up the challenges that constantly growing air traffic brings to our airspace we have to invest and develop new technologies. In fact it's already happening. We have come up with new, innovative solutions. We will present them during WAC 2019 where PANSA for the first time will have its own exposition. To find out more please visit us at #239 stand.

About PANSA

Every day the Polish Air Navigation Services Agency ensures safety of passengers in more than 2,500 flights over Poland. We have one of the biggest airspace in Europe: over 334,000 km². Almost one million overflights, approaches, take-offs and landings in 2018 were supervised by more than 570 air traffic controllers employed in the Polish Air Navigation Services Agency, as well as almost 240,000 General Aviation flights under watch of the Flight Information Service (FIS).

Only in 2018 air traffic growth in Poland amounted to 10%, while in the whole European network to 3,8%.

Our air traffic controllers are supported by advanced technology. Over 200 devices located throughout Poland guaranteeing safety of air traffic within the Polish airspace: air-ground communication systems, RNAV systems, ILS – DME systems supporting smooth and precise landing in low visibility, radars. We are responsible for advanced aviation infrastructure – we build and develop it.

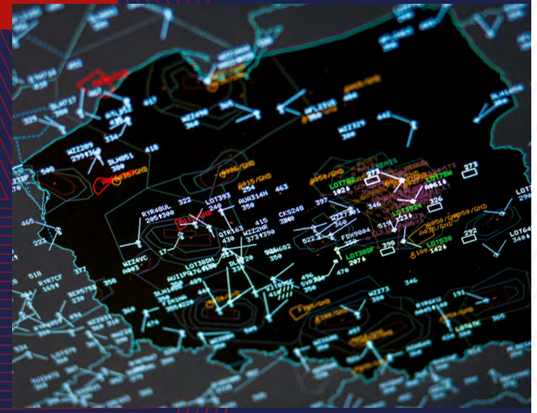
Together with ORO NAVIGACIJA, PANSA joined the Functional Airspace Block – Baltic FAB. In alliance with most experienced ANSPs we invest in air traffic management technology. Baltic FAB together with NATS, DFS and other European leading ANSPs, migrates the air traffic management system into iTEC.

PANSA also builds and develops tools for efficient management and planning of airspace:
– CAT that ensures accurate and efficient management of the airspace,
– PANDORA that supports controllers and other operations personnel with the wide spectrum of a real time aviation data, raising their situational awareness,
– PANSA UTM tool for coordination and integration of unmanned and controlled air traffic.
The Polish Air Navigation Services Agency is also the only institution in Poland training and employing civil air traffic controllers. We also provide Flight Inspection Services for monitoring the proper operation of ground-based navigation aids from the air. We offer validation of conventional and satellite based flight procedures.

Every day there are almost half a million passengers on board of all planes flying over Poland. In the Air Traffic Management Centre of the Polish Air Navigation Services Agency, as well as in 15 airports throughout Poland the air traffic controllers take care of their safe journey.

We are a part of aviation world which grows dynamically, and we grow together with it. Due to specific geographical location of Poland, PANSA in cooperation with domestic and European institutions will become a bridge between Europe and the East in the services provision. We are a gateway to Europe and a gateway to the East.

Safety in the air. It is our mission and duty. Polish Air Navigation Services Agency.



Tuesday, March 12th

10.00 – 10.30 **Presentation on Advanced airspace management – Present and Future – SESAR recent developments by PANSA**
Jacek Wyrwich – PANSA

11.00 – 11.30 **Presentation on Data Driven Aerodrome ATM Environment**
Jarosław Niewiński – PANSA
Eric Wernsperger – Frequentis

13.00 – 13.15 **Grand opening of PANSA's booth at World ATM Congress**
Henrik Hololei – European Commission
Mikołaj Wild – Polish Ministry of Infrastructure
Janusz Janiszewski – PANSA
Marzenna Adamczyk – Ambassador of the Republic of Poland in Madrid

13.15 – 14.15 **Debate "What will be the role of the Central & Eastern Europe in the future ATM Network?"**
Mike Shorthose – Helios (moderator)
Christine Berg – European Commission
Mikołaj Wild – Polish Ministry of Infrastructure
Janusz Janiszewski – PANSA
Mindaugas Gustys – Oro Navigacija
Diederik Pen – WizzAir
Giancarlo Bueno – IATA
Fanica Cârnu – Romatsa

15.30 – 16.00 **Panel "Polish experiences and solutions at UAV's flights (regulations, PANSA UTM, U-space concept)"**
Malgorzata Darowska – Polish Ministry of Infrastructure
Piotr Samson – CAA of the Republic of Poland
Mateusz Kotliński – PANSA
Maciej Włodarczyk – PANSA
Filip Korzec – PANSA
Paweł Korzec (moderator)

17.00 – 19.30 **PANSA Cocktail Reception**

Wednesday, March 13th

13.00 – 16.00 **A6 Steering Board meeting**

14.30 – 14.45 **SESAR Walking Tours – Runway safety "Runway Condition Code Prediction Engine"**
Jarosław Niewiński – PANSA
Jacek Kopeć – ICM

15.30 – 15.45 **SESAR Walking Tours – Civil-Military Collaboration "Local ASM Tool – a part of Dynamic Airspace Configuration process"**
Łukasz Godlewski – PANSA

17.00 – 18.00 **Baltic FAB Cocktail Reception**

Thursday, March 14th

11.00 – 11.15 **SESAR Walking Tours – Data communications "Implementation of Data-link Services for the ATM in Warszawa FIR"**
Rafał Cichocki – PANSA

Permanent displays 10.00 – 17.00

CAT system
PANSA UTM system
Demonstrator of Runway Condition Code Prediction Engine
Aero Club of Poland

Presentation on advanced airspace management – Present and Future

Jacek Wyrwich
Involved in operational implementation of Eurocontrol Advanced Flexible Use of Airspace Concept (AFUA) in Poland. Head of joint civil--military Airspace Management Unit. Participates as an expert or a leader in variety of working groups and projects related to implementation systems and procedures supporting advanced airspace management, both within PANSA and on the international level.

Łukasz Godlewski
Leads the Operations Planning Bureau. Over 10 years of experience in airspace management, i.a. beeing involved in the operational implementation of Advanced Flexible Use of Airspace Concept (AFUA) in Poland. Leader in many projects related to airspace planning and designing (i.a. implementation of the vertical split of the ACC sectors, POLFRA etc.). Expert in many working groups and projects regarding ASM, both at the PANSA and international level.

Advanced airspace management – Present and Future – SESAR recent developments by PANSA

PANSA's experts will discuss procedures and demonstrate technology that supports implementation of the advanced flexible use of airspace in Poland. AFUA applies to both controlled and uncontrolled environment, including Free Route Airspace. And is beneficial for all users.

Next generation developments in the airspace management area aim to integrate and automate ASM/ATFCM processes into one. This is why DAC (Dynamic Airspace Configuration) developed. Therefore, the presentation will include demonstration of a system prototype which is a part of SESAR 2020 PJ 08 Solution.

The panel will be moderated by PANSA's experts, involved in design and development of the ATM implementation programs, including SESAR projects.

SESAR JOINT UNDERTAKING

Presentation on Data Driven Aerodrome ATM Environment

Jarosław Niewiński
Leads the innovation department at PANSA. Has variety of expertise in managing large scale projects within aviation, focused on optimization of available infrastructure, safety standards and efficiency. Jarosław lead or took part in many national and international projects. He was leading consultant for operational excellence and business transformation and efficiency for airports, ANSPs and handling.

Eric Wernsperger
He lead numerous project deliveries to the operational ATC environments around the world. Eric ensures implementation of state-of-the art technology in a future-oriented product roadmap, with a focus on minimum risk and maximum customer benefit. He devoted his passion for digital air traffic management solutions.

Presentation on Data Driven Aerodrome ATM Environment

Airports and aerodromes play a key role in ATC operations. For most travellers they represent the face of air traffic control. It is where everything starts and ends. ATC operations in towers produce and hold a vast amount of flight information to ensure its operations: flight plan information, tactical information is generated including departure routes, gate allocations, taxi routes, estimated start-up time, target take-off time, predicted arrival time and gate, etc. Defining a single and governed tower flight data exchange mechanism is a necessary step but it needs to be supported by enabling infrastructure, able to facilitate the data sharing between stakeholders of various kind.

Debate on regions

"What will be the role of the Central and Eastern Europe in the future ATM Network?"

The airspace between the Baltic Sea and the Black Sea is one of the most important gateways of the European continent. This region handles air traffic in the North – South, East – West directions.

The European Union border countries link the EU with the continent of Asia and the region of the Middle East. They handle out-of-area traffic, military traffic from non-EU/NATO countries, including those over Baltic High Seas; they also deal with the high traffic volatility due to greater vulnerability to the external political conflicts.

EUROCONTROL forecasts show that traffic in Central and Eastern part of Europe will grow significantly faster than in other parts of the region. At the same time, high traffic density, distinctive for today's "core area", may be spreading in all directions, including the EU bordering countries.

The aim of the debate is to focus on the increasing role of the Central and Eastern European countries in the future ATM developments.

Baltic FAB
A PART OF SINGLE EUROPEAN SKY

Mike Shorthose
Mike will chair the debate. He is a highly respected adviser to the aviation industry and its investors. Early in his career, Mike developed a technical specialism in design, standardisation and implementation of aviation technology and surveillance systems. Since then his work has spanned a wide range of aviation issues, including business advice on the planning and execution of large air traffic control projects, organisational change and cost benefit analysis.

Mikołaj Wild
Secretary of State in the Ministry of Infrastructure, Plenipotentiary of the Government for the Central Transport Hub for the Republic of Poland. In the years 2003-2006 member of the Team of Jurisprudence and Studies at the Office of the Constitutional Tribunal. From 2006 he worked for the General Counsel to the Republic of Poland. In the years 2008-2017 an employee of the Institute of Justice, where in the years 2013-2017 he was the Chairman of the Section for Constitutional Law, Civil Law Section and a member of the Scientific Council. In the years 2015-2017 the Deputy Minister of the Treasury, supervising, among others, Legal and Process Department, Property of the Treasury and the Audit and Inspection Office, and exercising personal supervision over the aviation sector companies, including PLL LOT S.A.

Christine Berg
Head of the Single European Sky Unit in the Directorate-General for Mobility and Transport within the European Commission. Formerly managed maritime transport issues, including relations with the International Maritime Organisation, and led a modernisation programme for European maritime safety and pollution prevention rules. Her previous assignments included, among others, the Copernicus earth observation programme, energy policy, innovation, industrial, trade and standards policy. Holder of a doctoral degree in economic and social sciences.

Janusz Janiszewski
PANSA Acting President, active ATCO. Prior to this appointment worked as an Director for Strategy and International Affairs, responsible for delivering the Agency's key objectives within SES framework, as well as coordination of PANSA team in the process of successful revision of the cost-efficiency target for Poland in the Performance Plan of the Baltic FAB for 2015-2019. In March 2018 appointed as Member of the Advisory Committee for the Central Transport Hub in Poland.

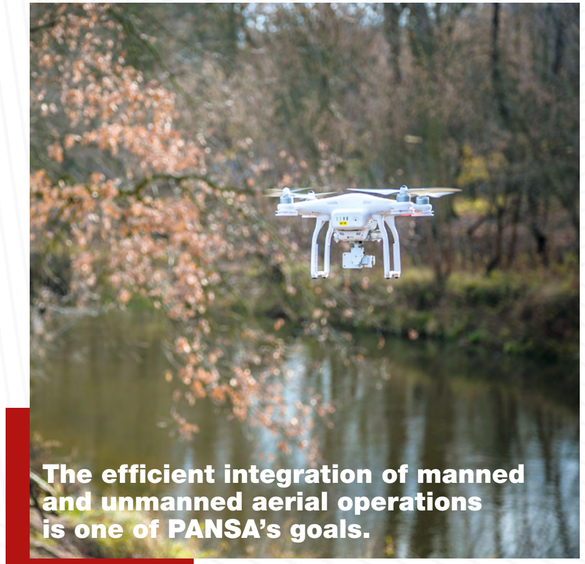
Mindaugas Gustys
Oro Navigacija CEO. Responsible for the overall strategic direction and performance of the company, including cooperation with the Board. Prior to this appointment worked as Deputy Director and Economics Division. His 13-year experience in air navigation field combines critical operational and safety decision making with long term strategic planning and extensive asset management.

Diederik Pen
Executive Vice President and Chief Operations Officer. In WizzAir since 2013. Responsible for ground and flight operations, technical services and operations control organizations, safety and security. Formerly the CEO and COO of Martinair Holland. Previously worked for Virgin Blue Airlines and Brisbane Airport Corporation in Australia, as well as Amsterdam's Schiphol Airport. Holder of a master's degree in business economics at the University of Amsterdam.

Giancarlo Buono
Safety and Flight Operations Director for Europe, IATA. Responsible for the delivery of IATA Safety and Flight Operations Strategy in Europe and for the liaison with European Regulators. Captain – 31 years of experience in the Air Forces and Airline industry. Holder of a Master Science Degree in ATM. Accident Investigator, IATA and ISO Quality and Safety Auditor. Visiting professor in Airline Regulatory Compliance at London City University and in Safety Management at Geneva University.

Fanica Cârnu
Deputy Director General of ROMATSA, responsible for coordination of the day-to-day activities in the field of operations, technical, development and those regarding the implementation of the DANUBE FAB. Formerly a Head of the Romanian Air Forces and Romania representative at NATO's Supreme Headquarters Allied Powers Europe. Experienced in European air traffic management and civil-military cooperation, having served as vice chairperson and Chairperson at EUROCONTROL's Military ATM Board (2007-2010).

Panel on Polish experiences and solutions at UAV's flights



Panel on "Polish experiences and solutions at UTMs' flights (regulations, U-space concept)"

The main objective of this panel is to demonstrate the Unmanned Traffic System – PANSA UTM which supports planning and conducting of the UAV flights. The panel will also present the role of the system in advanced airspace management, including Flexible Use of Airspace in the G class, as well as solutions for the U-space concept development and Central European Drone Demonstrator (CEDD) project. Mr Janusz Janiszewski (PANSA CEO) and Mr Piotr Samson (President of the CAA of Poland) will inaugurate the panel during which experts from the Civil Aviation Authority of Poland, Ministry of Infrastructure and PANSA will give presentations on the subject.

PANSAUTM

Paweł Korzec – moderator
Creator of the unique system for presenting complex aeronautical information to amateurs, professionals and law enforcement services, including all aeronautical data. Author of: ANSP's "two way non-verbal" communication system, "Out-of-the-zone-ALARM" solution for UAV operations (tracker based), "altitude and height reference system" for UAV. Founder of multidimensional drone registration system dedicated to CAA as a foundation for Public Safety solutions in U-space. Creator of a marketing program promoting safe flying of unmanned aerial vehicles.

Małgorzata Darowska
Plenipotentiary of the Ministry of Infrastructure, responsible for all UAV and U-space implementation matters and for the Central European Drone Demonstrator Programme in Poland. Prior to those positions she worked for the Ministry of Development and the Polish Development Fund, shaping the concept of the drone programme in Poland. Lawyer and manager with 15+ years of experience in leading Polish and international law companies, specialising in technology and regulatory matters.

Piotr Samson
President of the Polish CAA and member of the Management Board of EASA. Graduate of Warsaw University of Technology. He completed the MBA at Cranfield University and studies in Business Department of Galway University. In 1993 he began his work at LOT Polish Airlines. He contributed to the establishment of two airlines in Poland. President of the Permanent Commission of EUROCONTROL in 2017, currently the Chairman of the PAR AG of EASA and Vice President of EUROCONTROL's Provisional Council.

Mateusz Kotliński
UTM Project Manager and UAV Tracking Project Manager at PANSA, responsible for enabling U-space concept and deployment of PANSA UTM. He cooperates with international aviation organizations and agencies on drones issues. Member of the A6 U-space Task Force. He actively contributes European Network of EU Demonstrators on behalf of PANSA and Central European Drone Demonstrator.

Maciej Włodarczyk
Leads the UAV Operations Department at PANSA, responsible for coordination of UAV flights in Poland, manned / unmanned aircraft integration, development of UAV usage procedures. Participates in the operational development of UTM PANSA, shaping the architecture of Polish U-space, tasks related to development of Central European Drone Demonstrator (CEDD) and numerous national initiatives.

Filip Sosin
Chief UTM / U-space Specialist at PANSA. Manager of PANSA U-space Programme responsible for all PANSA's strategical UAV initiatives, among others the Polish U-space Concept and UTM/DTM development at PANSA. Supports the work of UAV Operations Department at PANSA. Experienced in the field of strategical airspace management which is invaluable in numerous PANSA projects and national working groups.

A6 Steering Board meeting

The Polish Air Navigation Services Agency became a full member of the A6 Alliance in 2015.

A6 Steering Board meeting

The A6 Alliance was established in 2011 to coordinate R&D and investment activities of the key ANSPs under the SESAR Programme. It is focused on SESAR development and deployment, SESAR deployment execution and key strategic areas of A6 common interest related to transport and aviation legislation.

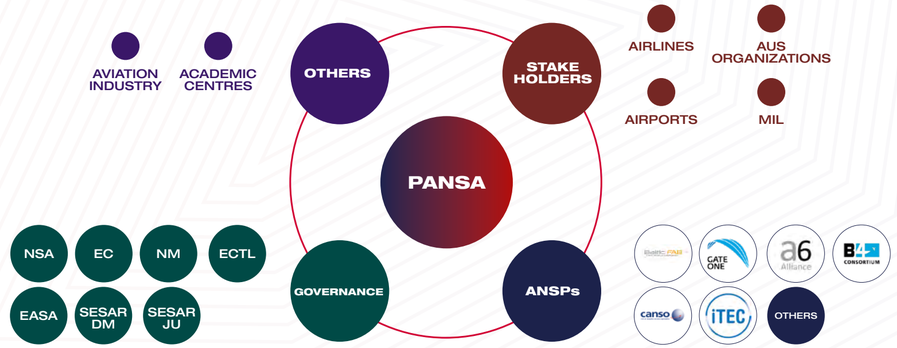
The group was founded by six ANSP members of the SESAR Joint Undertaking: German DFS, French DSNA, Spanish ENAIRE (formerly AENA), Italian ENAV, British NATS and NORACON – a consortium of ANSPS from Austria, Norway, Estonia, Finland, Ireland, Sweden and Denmark.

The Polish Air Navigation Services Agency became a full member of the A6 Alliance in 2015, together with the international partnership of ANSPs called COOPANS. This year PANSA Representative Mr Maciej Rodak acts as Chairman of the A6 Strategy Board.

In terms of international relations, the main aim of the Polish Air Navigation Services Agency is to translate its long term business strategy and objectives into the effective works on different international fora. PANSA performs its activities via international organizations and institutions influencing ATM industry, like ICAO, European Commission, EASA, EUROCONTROL, CANSO, Network Manager, SESAR Deployment Manager and SESAR Joint Undertaking, as well as alliances or bottom-up initiatives of the air navigation services providers, e.g. A6, GATE ONE, B4 and bilateral contacts.

A unique partnership of its kind is Baltic FAB – Functional Airspace Block consisting of Poland and Lithuania. PANSA, together with its partner ORO NAVIGACIJA, continue cooperation at the inter-FAB level with neighbouring ANSPs in the operational, technical and communication area.

Focus on relations with partners



SESAR walking tours at the World ATM Congress 2019

During the World ATM Congress, SESAR (SESAR Joint Undertaking and SESAR Deployment Manager) will organize “SESAR walking tours” for the second year in a row.

The idea behind the SESAR walking tours is to showcase completed or on-going projects, both covering research and development, as well as deployment area of SESAR Programme. Just like at the World ATM Congress 2018, projects will be showcased with a significant engagement of partners involved in SESAR: this is the operational stakeholders (ANSPs, Airspace Users, Airport Operators) and industry who will present their progress and achievements in the SESAR domain.

Visitors of the walking tours will have an unique opportunity to meet experts from the SESAR community and see first-hand the wide variety of solutions that have been or are being developed and deployed across Europe. At the last edition in 2018 over 450 guests attended the walking tours, giving those who took part in the tours quite a huge visibility and extra publicity.

As concerns the SESAR walking tours 2019, submissions already received from SESAR partners have been grouped content-wise into several clusters.

Polish Air Navigation Services Agency, by participating in the work carried out under the SESAR Programme, both in its research and development, as well as in its deployment-related part, has submitted the following project proposals to the SESAR walking tours:

– “Local ASM tool as a part of Dynamic Airspace Configuration process” (R&D project, on-going),
– “Runway Condition Code Prediction Engine” (R&D project, on-going),
– “Implementation of Data-link services for the ATM in FIR Warsaw” (deployment-related project, completed).

All three projects submitted by PANSA to the walking tours have been accepted by SESAR. Thanks to it, during WAC 2019 on PANSA stand all the neccessary information regarding issues mentioned above will be provided.

SESAR DEPLOYMENT MANAGER

SESAR JOINT UNDERTAKING

Participants of the walking tours will have an unique opportunity to meet experts.

Wednesday, March 13th, 2019, 14:30

Runway Condition Code Prediction Engine

Runway Condition Code Prediction Engine – the V2 project validation under the SESAR solution PJ.03b-06 SAFE resulted in the development of a feasible solution that supports airports, as well as ATS services with reliable information on the Runway Condition.
The V2 validation conducted in Gdansk airport had positive results and the evidence is supporting a perspective of the project further development and deployment.

During SESAR walking tour we will demonstrate the tool that supports mitigation of risks of runway excursions (either during take-off or landing) through the implementation of RCAMS Runway Condition Code Prediction Engine – an advanced mathematical model with machine learning elements developed jointly by PANSA & University of Warsaw under the SESAR 2020 PJ.03b-06 project.

The exhibition will show how the enhanced awareness of runway conditions may support an increase of airport resilience to weather events along with improvement of safety in aircraft operations.

This project has received funding from the SESAR Joint Undertaking under the European Union’s Horizon 2020 research and innovation programme under grant agreement No 734139.

Jarosław Niewiński
Leads the innovation department at PANSA.
Has variety of expertise in managing large scale projects within aviation, focused on optimization of available infrastructure, safety standards and efficiency. Jarosław lead or took part in many national and international projects. He was leading consultant for operational excellence and business transformation and efficiency for airports, ANSPs and handling.

Jacek Kopeć
SESAR 2020 contribution manager for the University of Warsaw. Experienced in working with numerical weather prediction models, as well as aircraft originating data (both operational and scientific). His expertise includes both conducting and leading research related to weather role and impact in ATM, developing novel solutions based on existing ATM data and cooperation with various ATM stakeholders in R&D.

Wednesday, March 13th, 2019, 15.30

Dynamic Airspace Configuration (DAC)

Local ASM tool as a part of Dynamic Airspace Configuration (DAC) process – the project aims at development of DAC tools functionalities in the Common Airspace Tool by PANSA (CAT), including definition and management of DMA type 1 and type 2 at sub-regional and regional levels. The exhibition will present technical feasibility of the DAC tools functionalities developed within the Common Airspace Tool by PANSA. Module of the local ASM supporting system is dedicated to support both pre-tactical and tactical levels of ASM. It supports CDM process between WOC and local DAC (ASM and ATFCM functions) regarding DMA allocation. System collects users requests for DMAs, then based on historical GAT flows and planned ACC sectorisation, helps the user to take the decision regarding the DMAs location to minimize impact on civil traffic and ACC sectors capacity.

Łukasz Godlewski
Leads the Operations Planning Bureau. Over 10 years of experience in airspace management, i.a. being involved in the operational implementation of Advanced Flexible Use of Airspace Concept (AFUA) in Poland. Leader in many projects related to airspace planning and designing (i.a. implementation of the vertical split of the ACC sectors, POLFRA etc.). Expert in many working groups and projects regarding ASM, both at the PANSA and international level.

Andrzej Goławski
IT engineer at PANSA. Java developer and certificated RedHat Trainee. Graduated from Warsaw University of Technology; Faculty Air Transportation. Expert with almost 20 years of experience in programming systems related to Air Traffic Management, i.e.: flight plan processing and airspace management systems.

Thursday, March 14th, 2019, 11.00

CPDLC – Controller--Pilot Data Link Communications

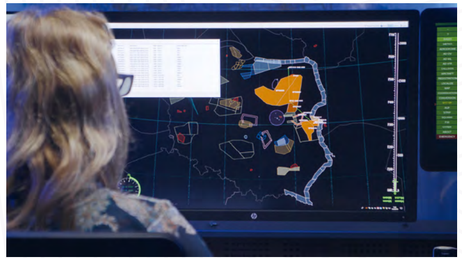
Implementation of Data-link services for the ATM in FIR Warsaw – the project results consist of the implementation of Data Link Services above FL285 in Warszawa FIR as required by the EC Regulation No 29/2009 (amended by the regulation No 310/2015), comprising the following DLS functionalities: DLIC – Data Link Initiation Capability, ACM – ATC Communications Management, ACL – ATC Clearances, AMC – ATC Microphone Check.
The primary message to be conveyed through the presentation is that the Air Ground Data Link capability according to the EU regulatory framework on data link services is an essential prerequisite for Baseline 2 applications and particularly for future services like 4D-trajectory based operations. The project will be showcased in the form of a short movie, facilitated and supported by an on-the-spot presence of a person with operational experience in CPDLC domain, including the following items and figures:
– System performance, including: CPDLC usage rate, CPDLC usage growth rate since its operational deployment in March 2018, Provider Abort rate,
Lessons learnt, including cooperation with airlines during CPDLC implementation process, and identified challenges for future implementation of Initial Trajectory Information Sharing.

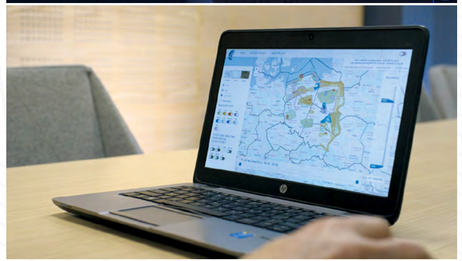
Rafał Cichocki
Head of PEGASUS_21 Operational Management Unit responsible for operational supervisory and development of Polish main ATM system which is used for Air Traffic Services provision in the whole Polish airspace. Involved in many PANSA projects implementing main and supporting systems and tools for ATCOs and operational personnel, including PEGASUS_21, PANDORA, CPDLC and PANSA iTEC Test and Validation Platform.

Usage of **CPDLC** in **B787-800**

Usage of **CPDLC** in **PEGASUS_21**

CAT provides all necessary information about current and planned airspace structures reservations. It also supports airspace management, both in the Free Route Airspace and the ATS route network.





CAT – Common Airspace Tool

CAT is an Airspace Management System developed by PANSA. In order to support the increasing demand for accurate and efficient management of the common airspace, shared by many different users, at the end of 2018 an upgraded and improved version of CAT tool was implemented.

CAT provides all necessary information about current and planned airspace structures reservations. It also supports airspace management, both in the Free Route Airspace and the ATS route network. System is widely used by air navigation operations personnel, including Airspace Management Cell and by the Polish Air Force.

The system contributes to the Aeronautical Information Management services solution aspects, providing support to an effective air navigation service provision. Crucial for that process is the real-time data flow between all subjects involved, including the collaborative decision-making process between civil and military partners. CAT automatically exchanges airspace data B2B both with Network Manager and other systems. The new version also brought to life a friendly, common web interface, dedicated to every user.

PANSA is working on the next version of the system as well, which will be introduced in the near future as a part of SESAR 2020 solutions. An upgrade will include, among others, the functionalities supporting collaborative decision making process between airspace management and flow and capacity actors, as well as radar data visualization.

CAT COMMON AIRSPACE TOOL

Jacek Wyrwich
Involved in operational implementation of Eurocontrol Advanced Flexible Use of Airspace Concept (AFUA) in Poland. Head of joint civil-military Airspace Management Unit. Participates as an expert or a leader in variety of working groups and projects related to implementation systems and procedures supporting advanced airspace management, both within PANSA and on the international level.

Łukasz Godlewski
Leads the Operations Planning Bureau. Over 10 years of experience in airspace management, i.a. beeing involved in the operational implementation of Advanced Flexible Use of Airspace Concept (AFUA) in Poland. Leader in many projects related to airspace planning and designing (i.a. implementation of the vertical split of the ACC sectors, POLFRA etc.). Expert in many working groups and projects regarding ASM, both at the PANSA and international level.

Maria Rybczyńska
12-year experience in the Airspace Management and related operational roles, both on pre-tactical and tactical levels. Participated in projects for airspace, especially development of IT system supporting the airspace management. Member of the group of experts who developed the CAT2.0. Responsible for requirements, usability testing and new functionalities supporting SESAR solutions. Currently works on UX design.

Michał Oleksyn
Airspace management operating expert. Instructor at the tactical level of airspace management, graduated in Aviation Management, Aviation Law, Management Analyst. Participated in many implementation projects for ASM services. Author of articles on civ-mil coordination of ATM. Co-founder of many technical and operational solutions used in the Airspace Management Unit in PANSA.

Arkadiusz Malon
Leading programmer of Common Airspace Tool (CAT). Graduate of Air Traffic Transportation at Warsaw University of Technology, has been working in Polish ATM ever since, first at Polish Airports State Enterprise and since 2007 at Polish Air Navigation Services Agency. Almost 20 years of experience in creating Air Traffic Management related systems, including flight plan processing and airspace management.

Jarosław Piełunowicz
Member of Common Airspace Tool (CAT) system development programme. Head of ATM Operators team – ACC flight data. Extensive ATM experience in various projects on both local and international level. PANSA representative within SESAR2020 innovation projects and within SESAR Deployment Manager implementation projects. Project manager for R&D projects related to ATCO supporting tools and systems.

Piotr Roguski
Software engineer at PANSA. Currently developing CAT system. MSc in Electronics and Telecommunications. Passionate about automation development and delivery software processes. Experimenting with new technologies and techniques to improve software. Likes to understand the bigger picture of how systems work and integrate.

Andrzej Goławski
IT engineer at PANSA. Java developer and certificated RedHat Trainee. Graduated from Warsaw University of Technology, Faculty Air Transportation. Expert with almost 20 years of experience in programming systems related to Air Traffic Management, i.e.: flight plan processing and airspace management systems.

PANSA UTM

PANSA is understanding and supporting the growing sector of the unmanned air traffic in Poland, by responding to its needs and demands. The safe and efficient integration of drones with general and operational air traffic, as well as other airspace users, is one of the strategic objectives of Agency. Therefore, PANSA creates a friendly environment for UAV sector development. A part of it was enabling the Central-European Drone Demonstrator (CEDD) project, which gives the opportunity to perform controlled testing, in urban area, a new unmanned technologies and services, which would eventually support deployment of the U-space concept In Poland.

The efficient integration, both manned and unmanned air operations will be possible only with the proper traffic management system in place. That led PANSA to design and to develop the Unmanned Traffic Management System, called PANSA UTM. Its implementation in Warsaw FIR will allow the accommodation of all UAVs operations demands for both in Visual and Beyond Visual Line of Sight. PANSA UTM will be very flexible, to easily adapt to all changes appearing along with the drones' industry evolution, as well as law regulations.

PANSAUTM

Mateusz Kotliński
UTM Project Manager and UAV Tracking Project Manager at PANSA, responsible for enabling U-space concept and deployment of PANSA UTM. He cooperates with the international aviation organizations and agencies on drones issues. Member of the A6 U-space Task Force. He actively contributes European Network of EU Demonstrators on behalf of PANSA and Central European Drone Demonstrator.

Maciej Włodarczyk
Leads the UAV Operations Department at PANSA, responsible for coordination of UAV flights in Poland, manned / unmanned aircraft integration, development of UAV usage procedures. Participates in the operational development of UTM PANSA, shaping the architecture of Polish U-space, tasks related to development of Central European Drone Demonstrator (CEDD) and numerous national initiatives.

Paweł Korzec
Creator of the unique system for presenting complex aeronautical information to amateurs, professionals and law enforcement services, including all aeronautical data. Author of: ANSP's "two way non-verbal" communication system, "Out-of-the-zone-ALARM" solution for UAV operations (tracker based), "altitude and height reference system" for UAV. Founder of multidimensional drone registration system dedicated to CAA as a foundation for Public Safety solutions in U-space. Creator of a marketing program promoting safe flying of unmanned aerial vehicles.

Rafał Paprocki
Works at the UAV Operations Department in PANSA. Responsible for development of UAV flight procedures within polish airspace and integration of manned and unmanned traffic. Participates in working groups involved in development of PANSA UTM, Polish U-space and the collaboration between PANSA and law enforcement agencies. His merges his interest in UAV technology with everyday duties.

Filip Sosin
Chief UTM / U-space Specialist at PANSA. Manager of PANSA U-space Programme responsible for all PANSA's strategical UAV initiatives, among others the Polish U-space Concept and UTM/DTM development at PANSA. Supports the work of UAV Operations Department at PANSA. Experienced in the field of strategical airspace management which is invaluable in numerous PANSA projects and national working groups.

Jacek Kopeć
SESAR 2020 contribution manager for the University of Warsaw. Experienced in working with numerical weather prediction models, as well as aircraft originating data (both operational and scientific). His expertise includes both conducting and leading research related to weather role and impact in ATM, developing novel solutions based on existing ATM data and cooperation with various ATM stakeholders in R&D.

Jarosław Niewiński
Leads the innovation department at PANSA. Has variety of expertise in managing large scale projects within aviation, focused on optimization of available infrastructure, safety standards and efficiency. Jarosław lead or took part in many national and international projects. He was leading consultant for operational excellence and business transformation and efficiency for airports, ANSPs and handling.

Mateusz Sokołowski
Involved in R&D airport projects focused on operational safety and efficiency. Manages the SESAR2020 internal / external communications within PANSA and the B4 Consortium, which includes brand dissemination, quality management and coordination with the SJU Communications Coordination Group.

Runway Condition Code Prediction Engine

Runway Condition Code Prediction Engine – the R&D activity in the framework of the SESAR solution PJ.03b-06 SAFE resulted in the development of a feasible solution that supports airports, as well as ATS services with reliable current and predicted Runway Condition information.

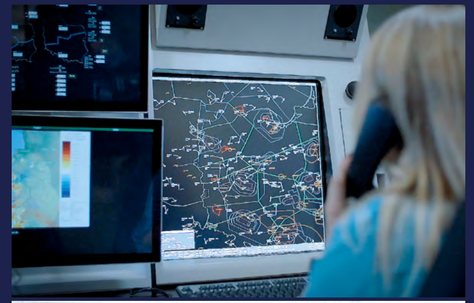
RCAMS Runway Condition Code Prediction Engine is designed to enhance awareness of runway conditions (both current and forecasted) that could support increase of airport resilience to weather events along with improvement of safety in aircraft operations. The validation conducted in the Gdansk airport had positive results and the evidence is supporting a perspective of the project further development and deployment.

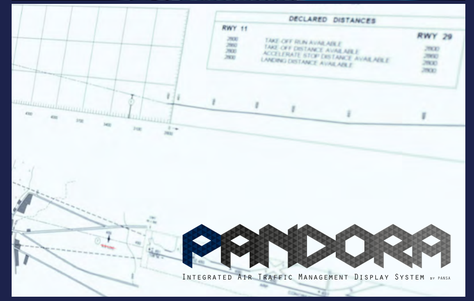
The exhibition will demonstrate the tool that supports mitigation of risks of runway excursions (either during take-off or landing) through the implementation of RCAMS Runway Condition Code Prediction Engine – an advanced mathematical model with machine learning elements developed jointly by PANSA & University of Warsaw.

The tool is compliant with upcoming Global Reporting Format regulations.

This project has received funding from the SESAR Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 734139.

SESAR JOINT UNDERTAKING





PANDORA

PANSA brought to live a very useful tool called PANDORA. This is the name of the Information Display System, that supports controllers and other operations personnel with the broad spectrum of a real time aviation data, raising their situational awareness. PANDORA is set on additional screen on each operational position, providing an easy and quick access to internal, operational data, maps, documents and instructions, airports and airlines data, aircrafts performance, meteorological information and many others.

PANDORA uses single database, but the information provided is customized according to the individual needs of end-user software.

PANDORA is being developed and modified constantly, as the information presented can change very often. System can be easily adapted to new requirements e.g. from the SESAR Program. Thanks to the interoperability with external systems, it can display information from many different sources, which makes it up-to-date with new demands. PANDORA has many advantages and improves safety of the everyday duty, which makes it a perfect system for any present and future users.

Flight Inspection and Instrument Flight Procedure Design and Validation

One of the services provided by PANSA is the Flight Inspection Service. To fulfil its aims, PANSA owns and operates two aircrafts – Beechcraft King Air 350 and L-410 UVP-E 15 “Turbolet”. Both of them are nicknamed “Parrots”, after their bright and vibrant painting. Those planes are used to monitor proper operation of ground-based navigation aids from the air. Service is required to provide compliance with ICAO guidelines and regulations issued by national aviation authorities. The planes are also used to validate conventional and satellite-based flight procedures.

The primary task of “Parrots” is to perform periodic flight inspections of CNS infrastructure, including DVOR/DME and ILS devices. The aircrafts are also used for commissioning flight inspection of newly implemented radars and navigational aids, technologies and validation of new flight procedures. Flight Inspection planes can perform commercial flights, including commissioning flight inspections of approach lights on behalf of any airport operators.

Both of PANSA’s aircrafts are called “Parrots”, due to their bright and vibrant colours.

ATS Personnel Training Centre

Training carried out in PANSA ATS PTC is provided for the purpose of issuing new licenses and refresher training courses for licensed personnel.

Polish Air Navigation Services Agency trains its own ATS personnel. For that purpose PANSA uses facility called “OSPA”, which is the ATS Personnel Training Centre. Spectrum of provided courses is very wide. Aside from training carried out for the purpose of issuing new licenses, the Agency also organises refresher training courses for licensed personnel. Additionally, PANSA offers courses on legal provisions, new rules concerning work organisation in ATM, as well as courses for instructors and assessors, and Aviation English proficiency training.

“OSPA” building has been completed in 2017 with state of the art design. Such modern facility ensures comfortable education environment for trainees, air traffic controllers and FIS officers. They can use advanced and convenient educational tools, supported by multimedia devices. Most of trainings and assessments take place with the use of dedicated simulators, reflecting operational environment for greater educational standards, perfect to learn basic skills. One of them is a part of the real-time operational system PEGASUS_21, which allows trainees to experience the actual airspace and system possibilities. The Centre provides also an aerodrome control tower simulator with 360 degrees omnidirectional imaging, displaying every available airport view.

The process of training ATS personnel in OSPA was developed in a way to ensure the highest quality and the appropriate level of training provided to ATS staff. All this translates into safety in the Polish sky. Our air traffic controllers are among the most productive ATCO’s in Central Europe and their productivity indicator is above the average, compared to the other Member States of the EUROCONTROL.

Spectrum of courses provided by PANSA ATS Personnel Training Centre is very wide.

Aeroklub Polski (Aero Club of Poland) is the Polish central association of persons practising air sports or recreational flying.

The first aviation organization of this type was Aero Club of Poland in Poznań, founded on 30th October 1919 and admitted to the FAI in 1920.

Before the World War II our members took active part in world's aviation sports. The first major international event was the Challenge 1930, a touring planes contest. Poles enjoyed success in the Challenge 1932 and several times in the Gordon Bennett Cup in ballooning contests. The Aero Club of the Polish Republic organized the Challenge 1934 – international contest and the Gordon Bennett Cup in ballooning in 1934-1936, also successful for the Polish pilots.

Franciszek Żwirko, Stanisław Wigura (winners of Challenge 1932 – an International Tourist Aircraft Competition) next to RWD-6, 1932, Warszawa Okęcie (Photo: NAC)

Jerzy Makula
Multi-awarded Polish pilot, multiple gold and silver medallist in the FAI World Glider Aerobatic Championships, multiple world champion in teams and individual European champion. For many years captain at PLL LOT. Currently the President of the Aeroklub Polski and Polish FAI Aerobatic Commission delegate. Chairman of the CIVA Glider Aerobatics Sub-Committee. A glider aerobatics trainer and an accredited judge in international glider and power aerobatic championships.

AEROKLUB POLSKI

„(...) Shoot to the skies our emblem! (…)" – this line from „Polish Airmen Anthem" perfectly captures the sense of pride of not only pilots' achievements but also Polish engineering ideas which gave the foundations for worldwide stunning technical solutions in the field of aviation.

The achievements of Polish pilots in connection with an "engineering mind" of Polish aerospace industry have resulted in global fame and success.

The best of the best

The Polish pilots' craft means thousands of hours of safe flights. That is hundreds of thousands of satisfied passengers. It is also excellent training and the latest machines in the world. But the label of the best in the world has been acquired by our pilots in a different way.

Polish pilots had no equal in aviation sports for decades. This phenomenal streak began with a breathtaking victory of Franciszek Żwirko and Stanisław Wigura in the Challenge 1932 international air contest. Years of war forced the aviators to fight for their homeland but then the Polish fantasy and heroism in the air caused that feats of Poles who were flying British aircraft are mentioned even today.

The post-war period is a return to sport aviation and the explosion of talent of many young pilots.

So let us see what sport aviation is and in which disciplines Polish aviators are the strongest.

Air sport is more precisely the rally and precision flying. These are related disciplines that require pilots to be able to perform very accurate navigation with the visibility of the terrain, to recognize objects on the ground, and to be extremely precise in terms of time. It is here that the Precision Flying Championship belongs. Poland can be proud of having Krzysztof Skrętowicz, who is the current world champion in precision flying and precision landing. Let us add that the Polish team is the winner of the team trophy.

Glider sport. For many years Sebastian Kawa has been a nightmare for the gliders from all over the world. He is a multiple world, European and Polish Champion. He is an outstanding glider who makes gliding races a real work of art. He is the most decorated glider pilot of all time. However, Kawa achieved fame and evoked interest in his discipline by challenging the Himalaya Mountains. He performed the pioneer flight over the peaks of the highest mountains in the world in 2015.

Glider acrobatics. The true legend in glider aerobatics is Jerzy Makula. He is a seven-time World Glider Aerobatic Champion, a four-time World Vice-Champion, an eight-time World Champion in the team, as well as a three-time European Champion. He ended his long-lasting and impressive sports career last year by representing Poland at The World Games 2017 that were held in Wrocław. However, Makula is not just an acrobat. He is a one-pilot institution. From 1972 to 2018 he was a pilot of LOT Polish Airlines, sitting at the controls of the most modern aircraft from the LOT's fleet. He was a pilot of the Pope. FAI, the World Air Sports Federation, honored Jerzy Makula with the FAI's Centenary Medal. There are two documentary films about Jerzy Makula. Currently he runs the LOT Crew company that specializes in hiring pilots for LOT, and is also the president of the Polish Aero Club.

Powered acrobatics. This is one of the most spectacular disciplines in air sports. For several years there has not been any clear leader in the Polish yard. A few pilots are taking part in the competition but without major success on the international arena. The situation is different when we look at Polish acrobats through the prism of air shows. Here the leaders are Artur Kielak and Maciej Pospieszyński. The first one is a silver medallist from World Air Games in Dubai. Kielak flies extremely effective, which makes him one of the most desirable pilots during air shows. His project – an air show of aerobatic XA-42 aircraft accompanied by the military MIG-29 aircraft is breathtaking and unforgettable.

Maciej Pospieszyński is a decorated glider pilot who switched to the powered aircraft and showed that it was the right decision, by winning the Polish Championship in his debut season. On this occasion, it is worth to mention one more amazing pilot Łukasz Czepiela, who is the first Polish pilot of Red Bull Air Race. Within this formula Łukasz is getting better and better, moving up the rankings of Red Bull Air Race. He also flies in Poland during the air shows together with his partner – Maria Muś. However, she performs aerobatics in a helicopter…

Motoparagliding. We cannot talk about aviation sports without mentioning the phenomenal pilot of the young generation who is only 23 years old but in motoparagliding slaloms he has achieved almost everything. He won, among others, a golden medal of The World Games – an international multi-sport and non-Olympic Games event. Wojtek Bógdał flies quickly and very accurately. He is the leader of the Polish team and has contributed to the popularization of air sport which may lead to its introduction to the Olympic Games program.

Similar expectations are aroused by the drone sport, which is developing at a crazy pace all over the world. Poland has contestants who are close to the world leaders, but the aeroclubs are still waiting for a real champion.

Maciej Stroiński

Tuesday, March 12th

10.00 – 10.30 **Presentation on Advanced airspace management – Present and Future – SESAR recent developments by PANSA**
Jacek Wyrwich – PANSA

11.00 – 11.30 **Presentation on Data Driven Aerodrome ATM Environment**
Jarosław Niewiński – PANSA
Eric Wernsperger – Frequentis

13.00 – 13.15 **Grand opening of PANSA's booth at World ATM Congress**
Henrik Hololei – European Commission
Mikołaj Wild – Polish Ministry of Infrastructure
Janusz Janiszewski – PANSA
Marzenna Adamczyk – Ambassador of the Republic of Poland in Madrid

13.15 – 14.15 **Debate "What will be the role of the Central & Eastern Europe in the future ATM Network?"**
Mike Shorthose – Helios (moderator)
Christine Berg – European Commission
Mikołaj Wild – Polish Ministry of Infrastructure
Janusz Janiszewski – PANSA
Mindaugas Gustys – Oro Navigacija
Diederik Pen – WizzAir
Giancarlo Bueno – IATA
Fanica Cârnu – Romatsa

15.30 – 16.00 **Panel "Polish experiences and solutions at UAV's flights (regulations, PANSA UTM, U-space concept)"**
Małgorzata Darowska – Polish Ministry of Infrastructure
Piotr Samson – CAA of the Republic of Poland
Mateusz Kotliński – PANSA
Maciej Włodarczyk – PANSA
Filip Korzec – PANSA
Paweł Korzec (moderator)

17.00 – 19.30 **PANSA Cocktail Reception**

Wednesday, March 13th

13.00 – 16.00 **A6 Steering Board meeting**

14.30 – 14.45 **SESAR Walking Tours – Runway safety "Runway Condition Code Prediction Engine"**
Jarosław Niewiński – PANSA
Jacek Kopeć – ICM

15.30 – 15.45 **SESAR Walking Tours – Civil-Military Collaboration "Local ASM Tool – a part of Dynamic Airspace Configuration process"**
Łukasz Godlewski – PANSA

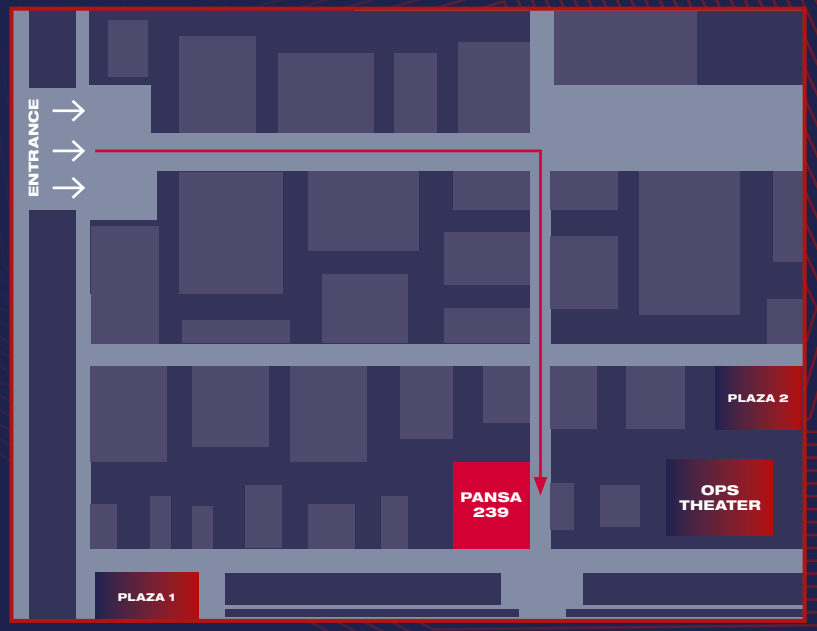
17.00 – 18.00 **Baltic FAB Cocktail Reception**

Thursday, March 14th

11.00 – 11.15 **SESAR Walking Tours – Data communications "Implementation of Data-link Services for the ATM in Warszawa FIR"**
Rafał Cichocki – PANSA

Permanent displays 10:00 – 17:00

CAT system, PANSA UTM system, Demonstrator of Runway Condition Code Prediction Engine, Aero Club of Poland



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