# PansaUTM operational deployment in Poland

15.09.2022r.

WINNER

# POLAND

**6TH AIRSPACE SIZE IN EUROPE**
334 000 km²

**365.000* IFR & 178.000 VFR**
flight movements in2020

**296.000 VLOS & BVLOS**
drone flights in 2020

**OVER 500.000 VLOS & BVLOS**
drone flights until November 2021

**38 MILLION POPULATION**

* a decrease of 60% compared to 2019 due to the COVID-19 pandemic

# POLAND

## Flight Information Region WARSZAWA (EPWW):

- **15** CONTROLLED AERODROMES
- **1** ACC
- **4** APP
- **15** TWR

# Short history of drones in Poland

2009
no rules dedicated for drones. First regular commercial flights carried out under VFR rules

2013
first national drone flight rules and personnel licensing

2016
amendment of regulations / enabling BVLOS flights outside separated zones

2020
Operational deployment of PansaUTM

2019 XI
Application for POPC project „Digital services for UAV"

2020/21
implementation of European regulations regulating UAV flights

2020
Launch of the project „Digital services for UAV"

Usługi Cyfrowe
dla bezzałogowych statków powietrznych

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# PANSA's solution for UAV Traffic Management

## LEGISLATION

- Adapted to country's requirements
- Foundation for development of services

## GROUND INFRASTRUCTURE

- Indispensable element for exchange of information and security
- Tracking

## UAV TRAFFIC MANAGEMENT SYSTEM

- Safe integration of manned and unmanned aviation

## MATURE PRODUCER MARKET

- Adapted to regulations and requirements

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WE ARE THE DRONE REVOLUTION

# PANSA UAV Traffic management system

1st

- operational used on a daily basis by Air Traffic Control on all controlled and military airports in Poland
- Operationaly used by Flight Information Service in uncontrolled airspace
- implemented in controlled civil and military airspace
- fully digital, common platform for all users
- non verbal communication with drone pilot

atm awards 2020 WINNER

✓ Main Award for „overall excellence”

✓ 1st in category „ ANSP UTM Projects”

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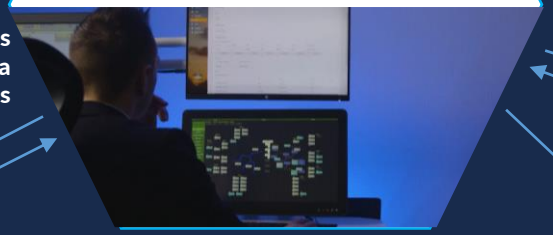
# PansaUTM – data flow between modules for CAA/ANSP, ANSP, UAV operator, Military, Local Administrations Units

**dCAA**
Module for Civil Aviation Authority

UAV operators and UAVs data

**SupDTM ANSP**
Module for UAV flight management and authorisation

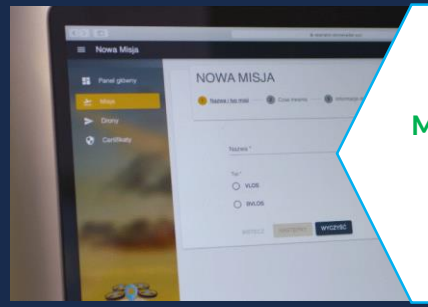


**LAU**
Local Administration Unit such as City

Information on UAV operators (licences, e-learning, registered drones)

Verification of qualification and UAVs

Flight requirements
Aeronautical data
Flight approvals




**dFPL**
Module for UAV operators (mission planner)

UAV flight request submission

**SupDTM MIL**
Module for UAV flight coordination in military airspace

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**dATS MIL**
Module for military TWR

**dPilot**
Mobile application integrated with PansaUTM (at the moment: DroneRadar)

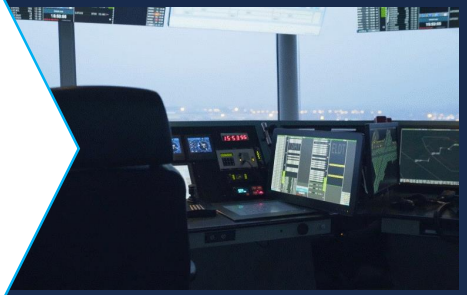
Aeronautical data

Flight requirements
Aeronautical data Flight approval numer

UAV flight request
Emergency submission

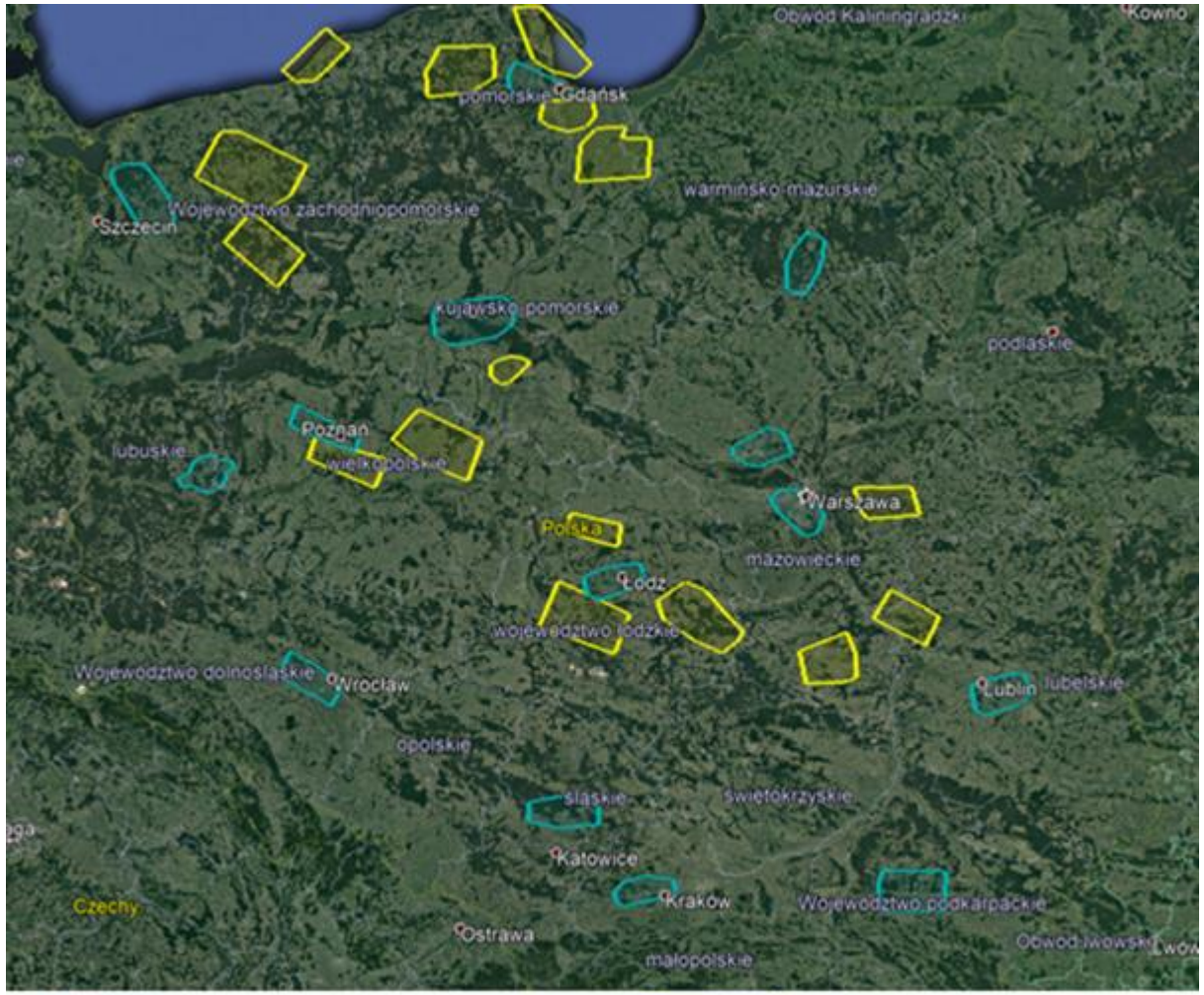
Approval/modification/rejection of UAV flight request
Emergency procedures

**dATS ANSP**
Module for ANSP/ATS services – TWR and FIS



# Operational deployment of PansaUTM since July 15th 2020

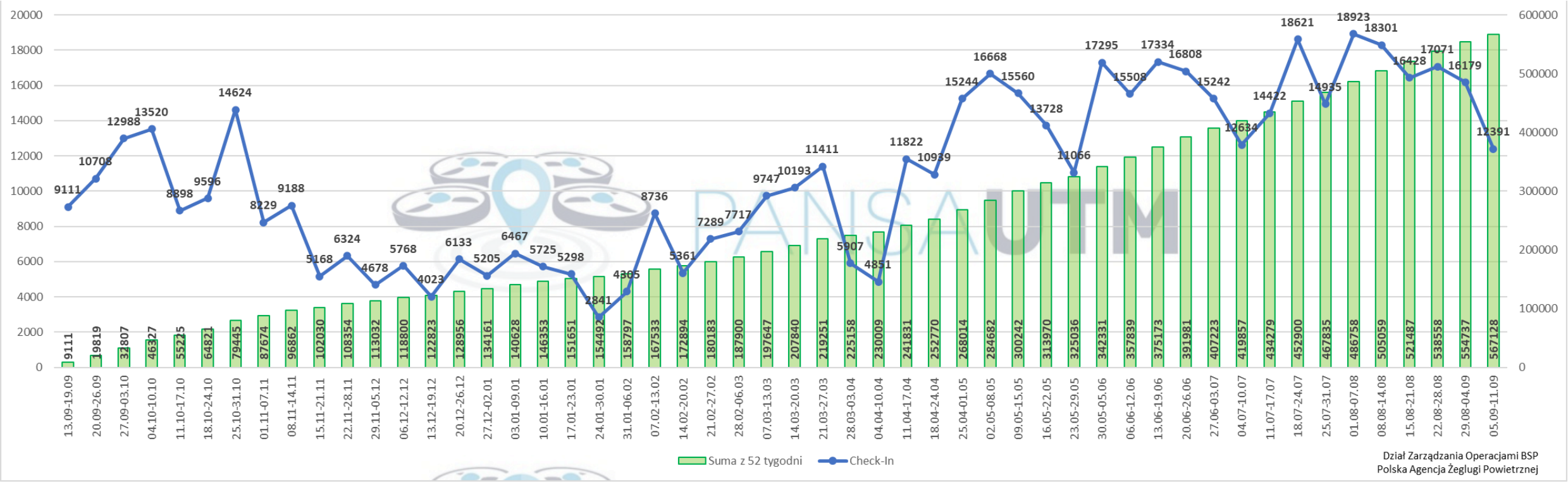
- ✓ CTR Poznań
- ✓ CTR Bydgoszcz
- ✓ CTR Modlin
- ✓ CTR Gdańsk
- ✓ CTR Lublin
- ✓ CTR Szczecin
- ✓ FIS Gdańsk
- ✓ CTR Wrocław
- ✓ CTR Katowice
- ✓ FIS Poznań
- ✓ CTR Kraków
- ✓ CTR Rzeszów
- ✓ CTR Łódź
- ✓ CTR Olsztyn-Mazury
- ✓ CTR Zielona Góra
- ✓ FIS Warszawa i Olsztyn
- ✓ FIS Kraków
- ✓ CTR Warszawa




Civil airport

Military airport

# PansaUTM – checkin's in numbers

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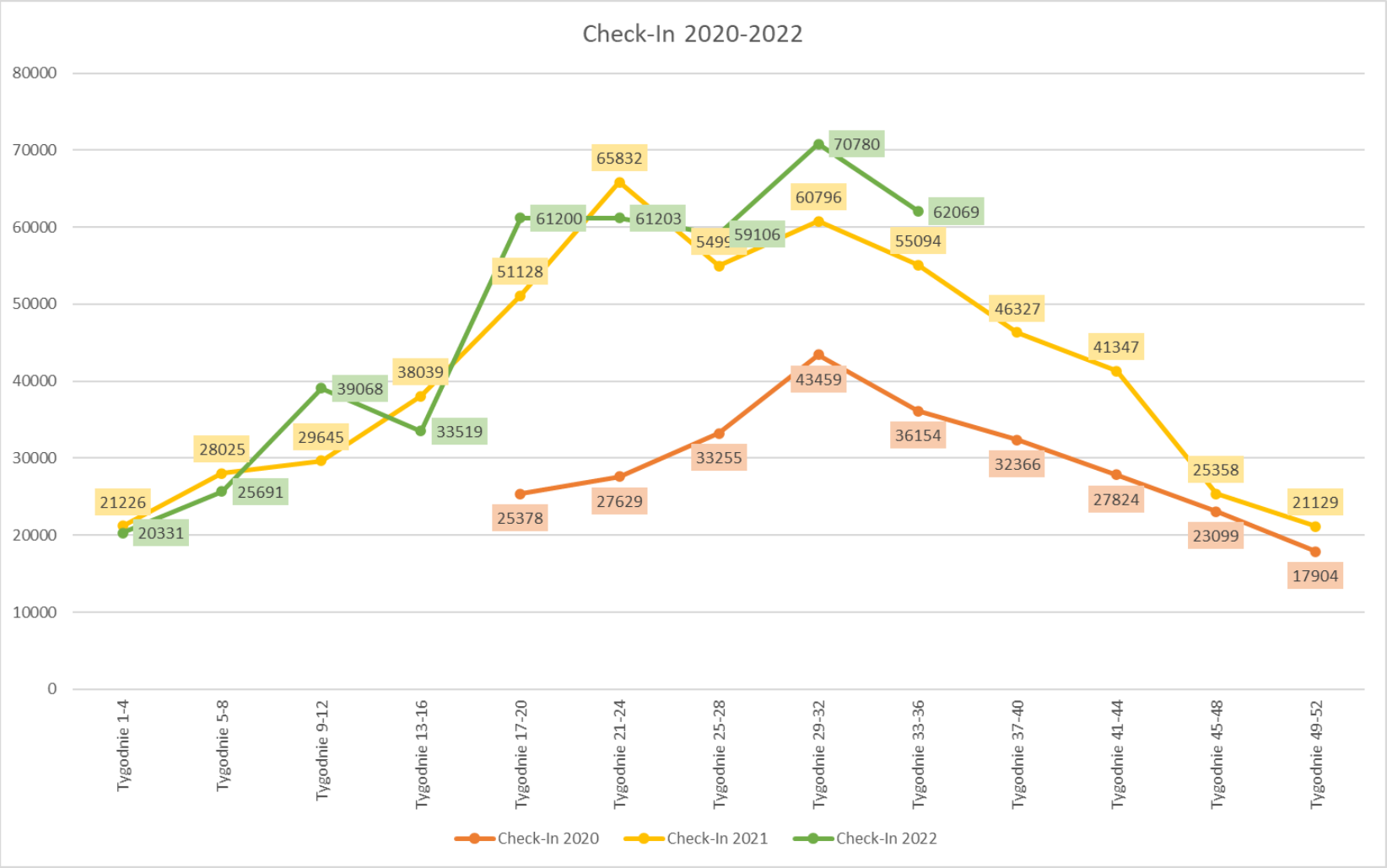
# PansaUTM – checkin's 2020-2022 in numbers

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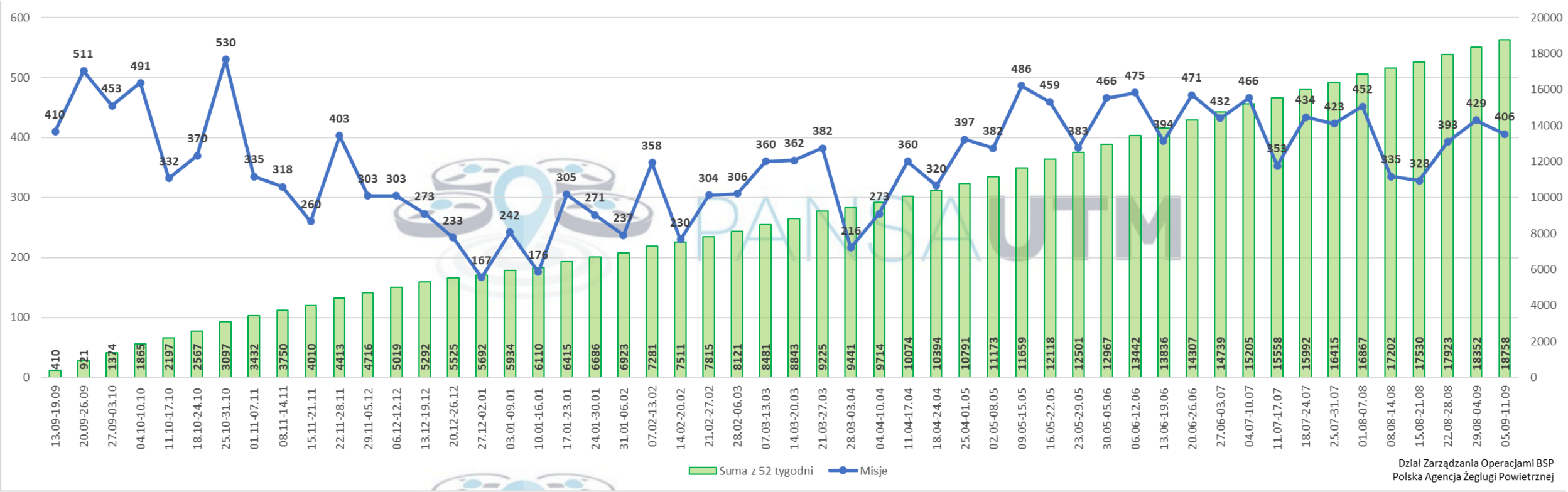
# PansaUTM – flightplans in numbers

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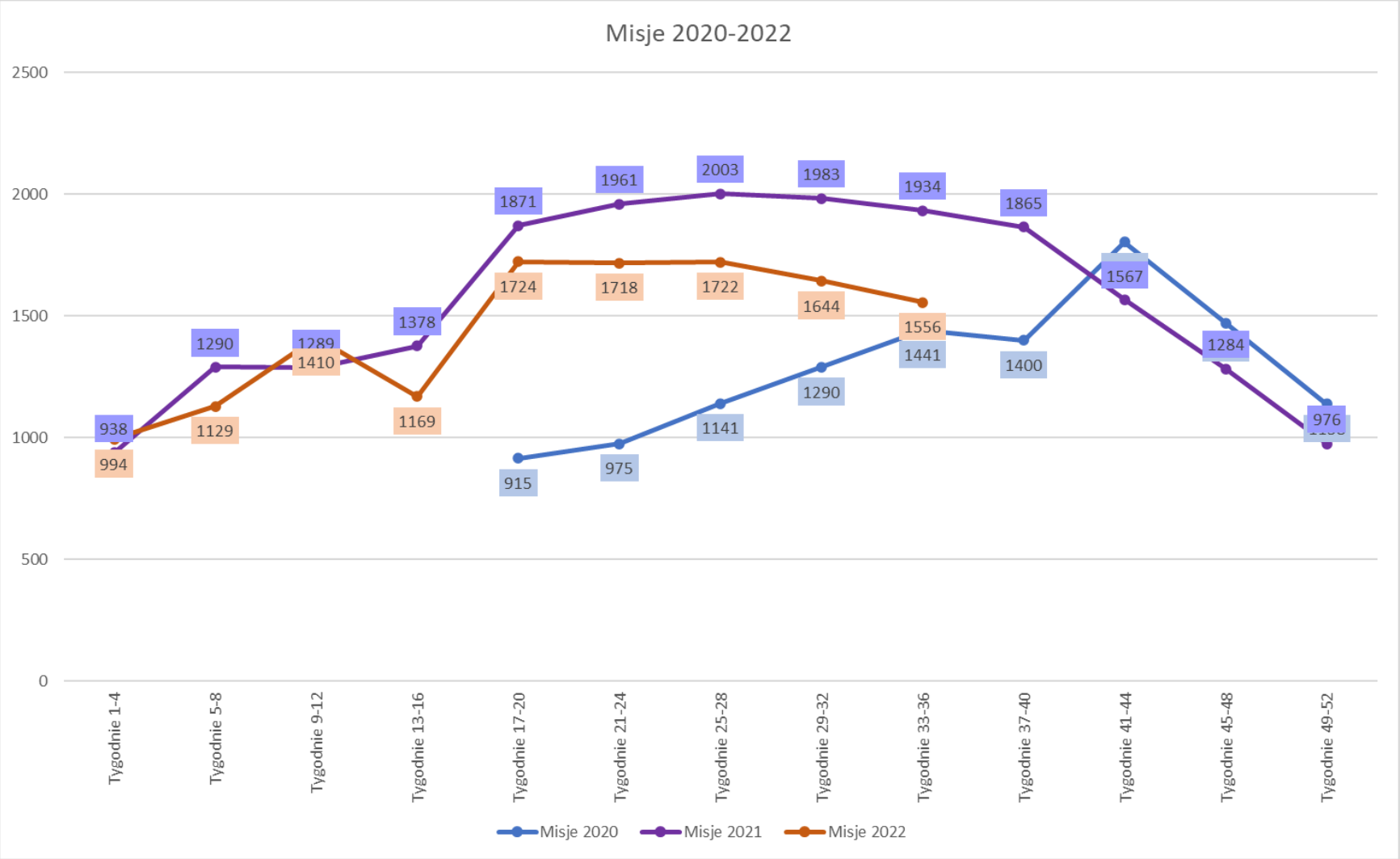
# PansaUTM – flightplans 2020-2022 in numbers



# The Functionalities

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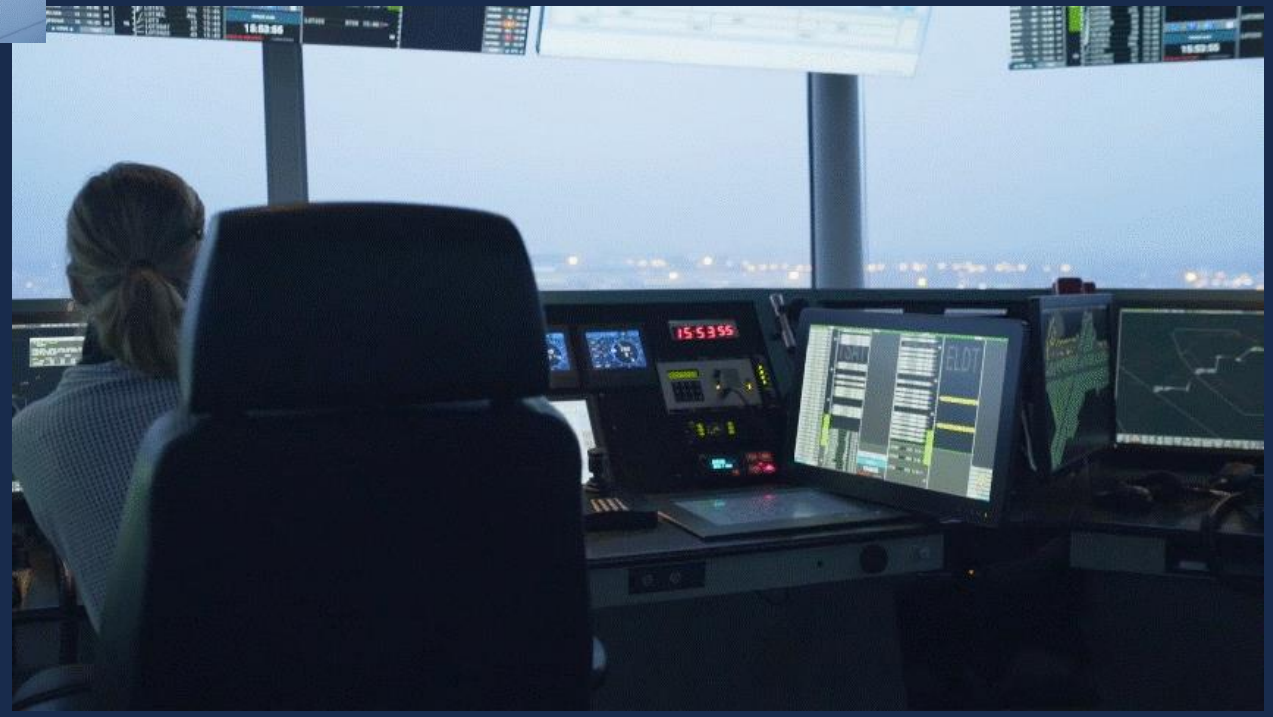
# Procedural and collaborative interface with ATC

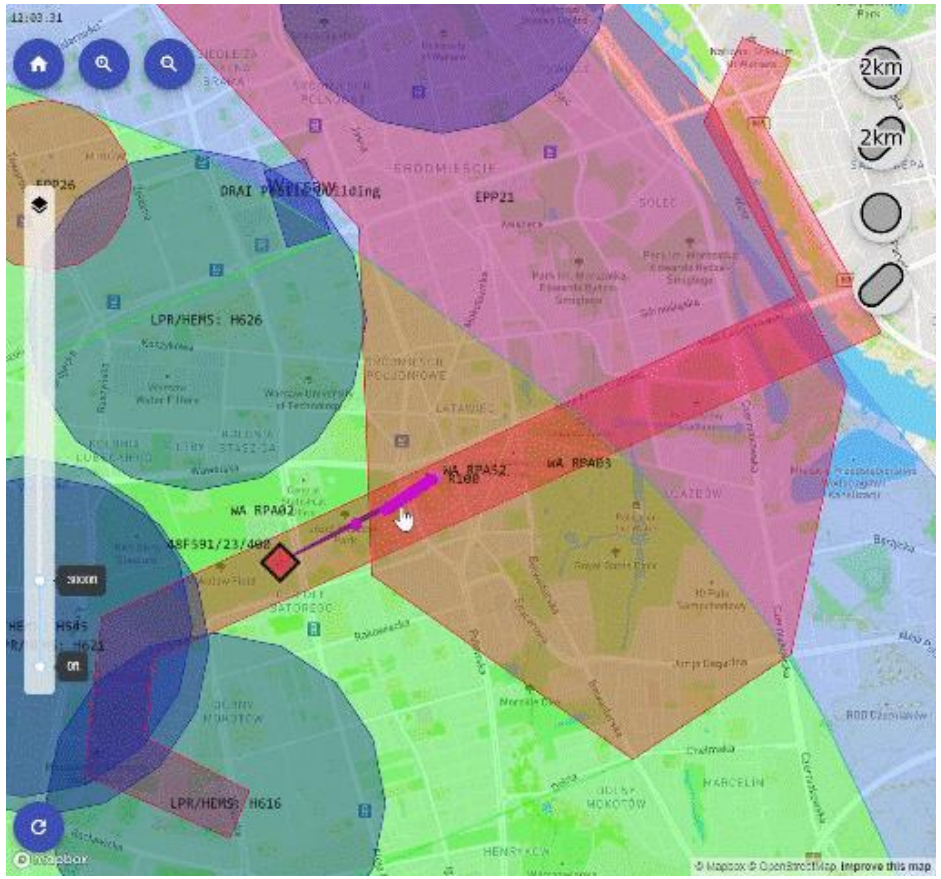
All above services provided by CDDLC (Controller Drone Data Link Communication) of PansaUTM

All UAVs reported by the integrated DroneRadar mobile application are visible to ATC



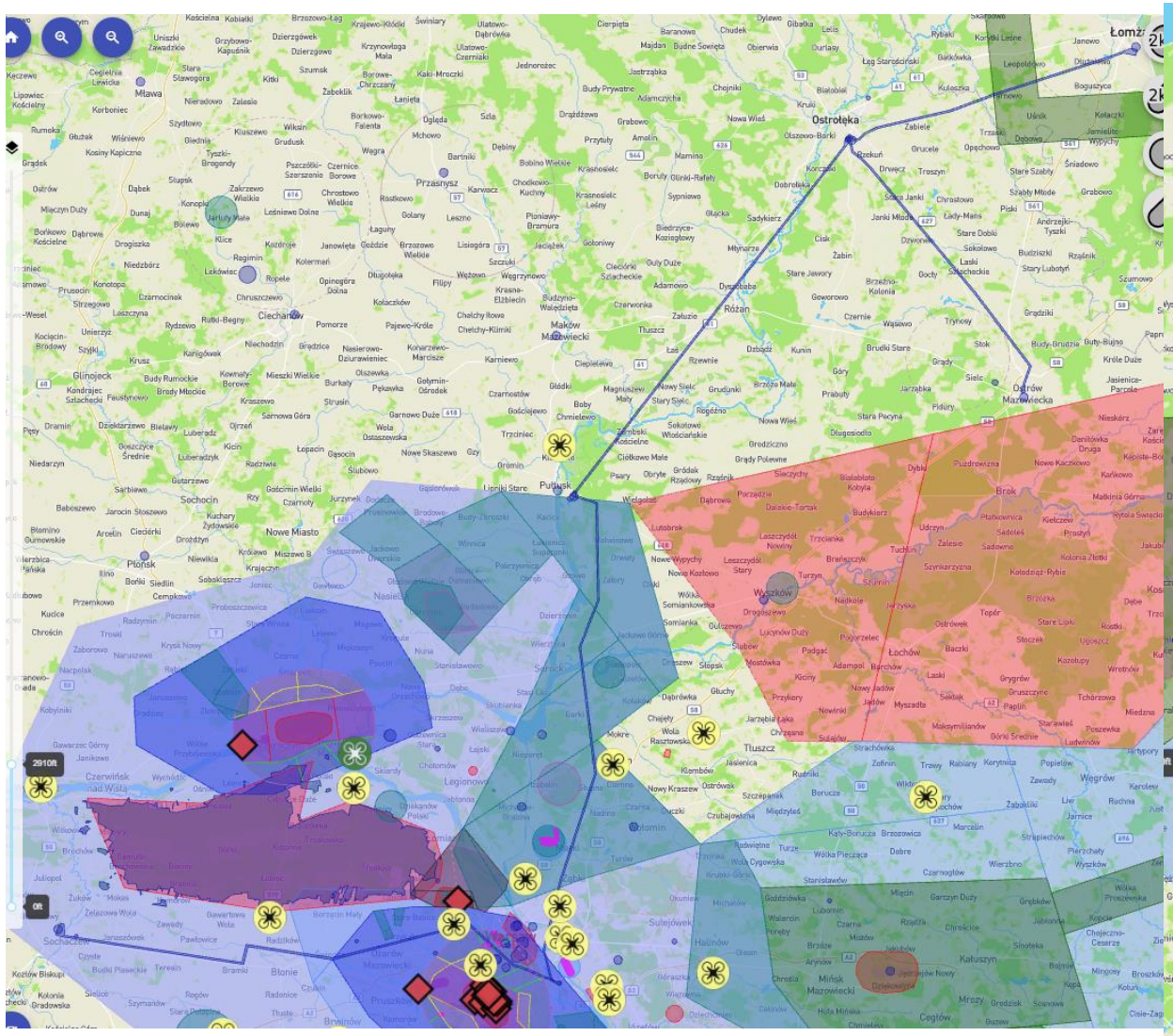
# Tools supporting UAS operations at/near Aerodromes – drone corridors

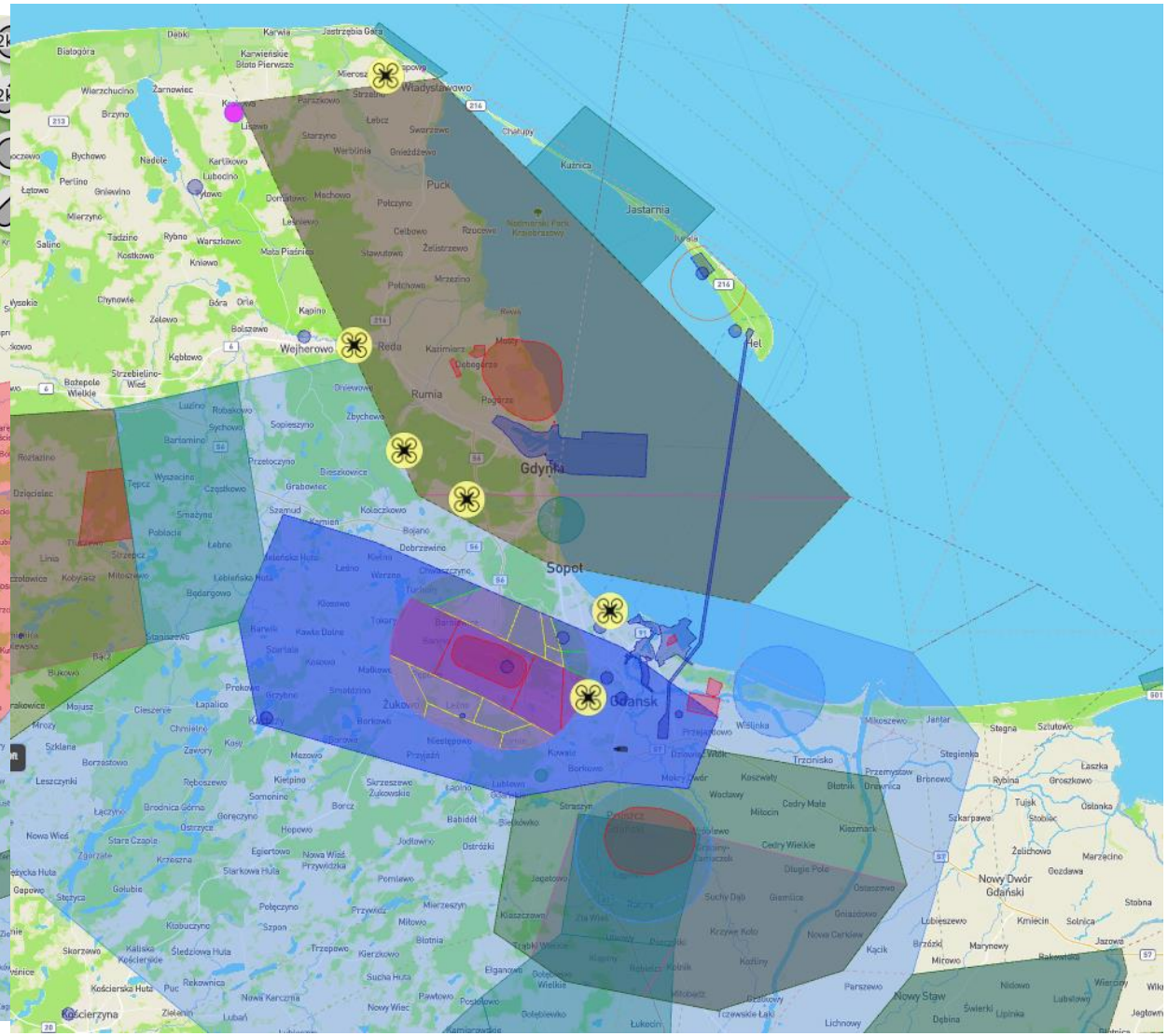
## Covid medical flights in Warsaw near EPWA



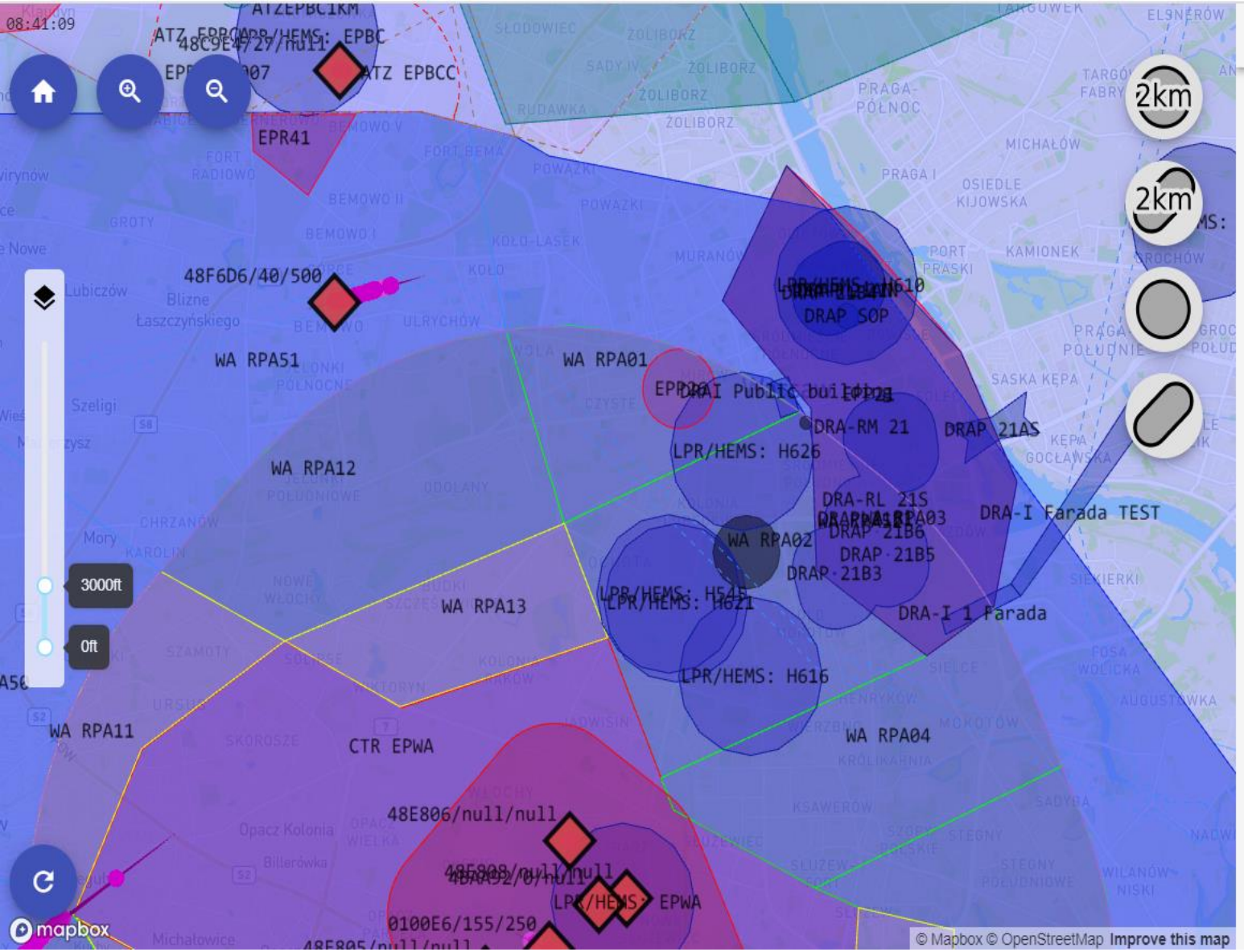

## Surveillance / inspection flights, infrastructure calibration at airports

# Tools supporting UAS operations– drone corridors



# Tools supporting UAS operations at/near Aerodromes – drone corridors

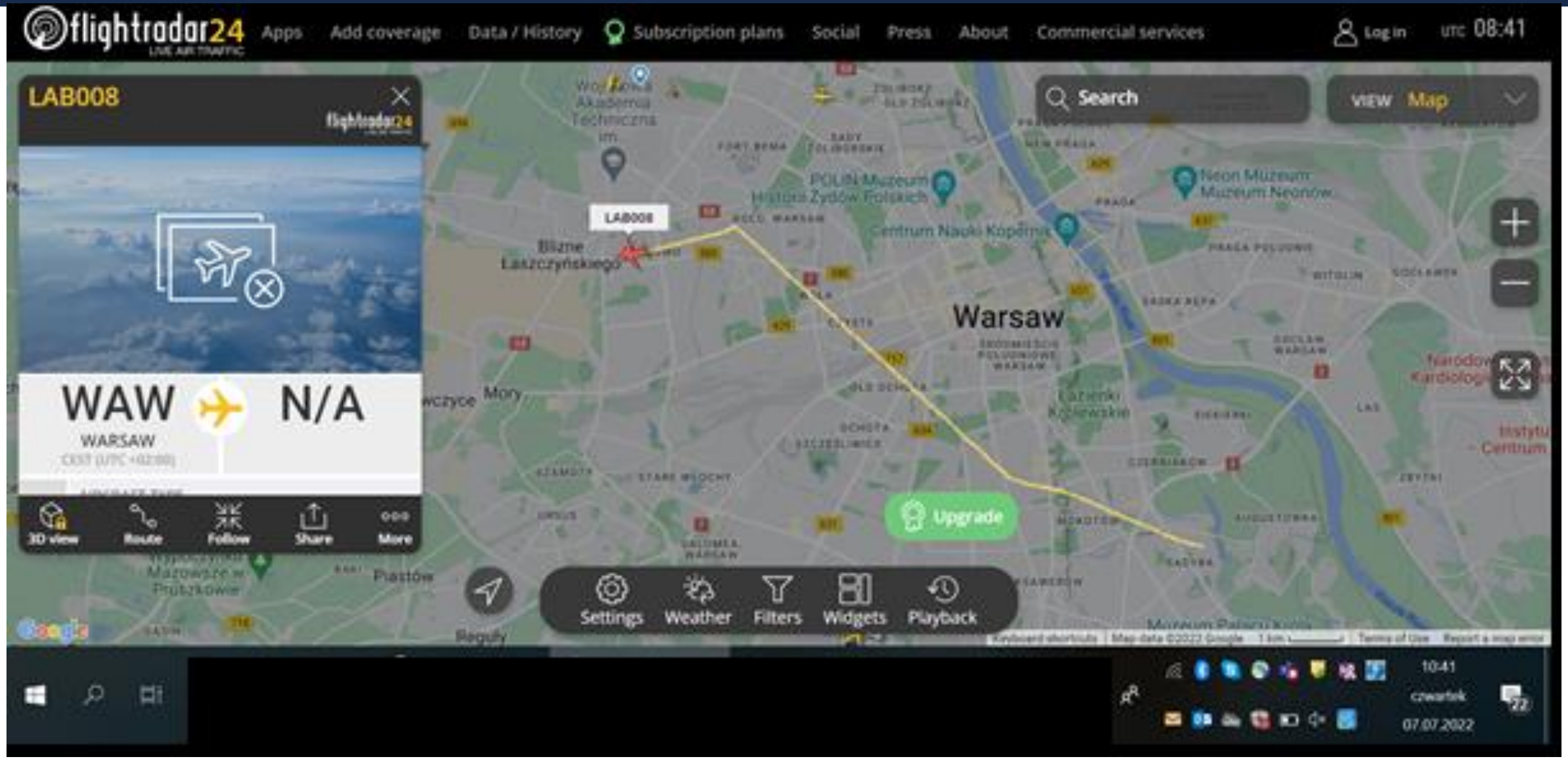



OPERATION | CONTEXT

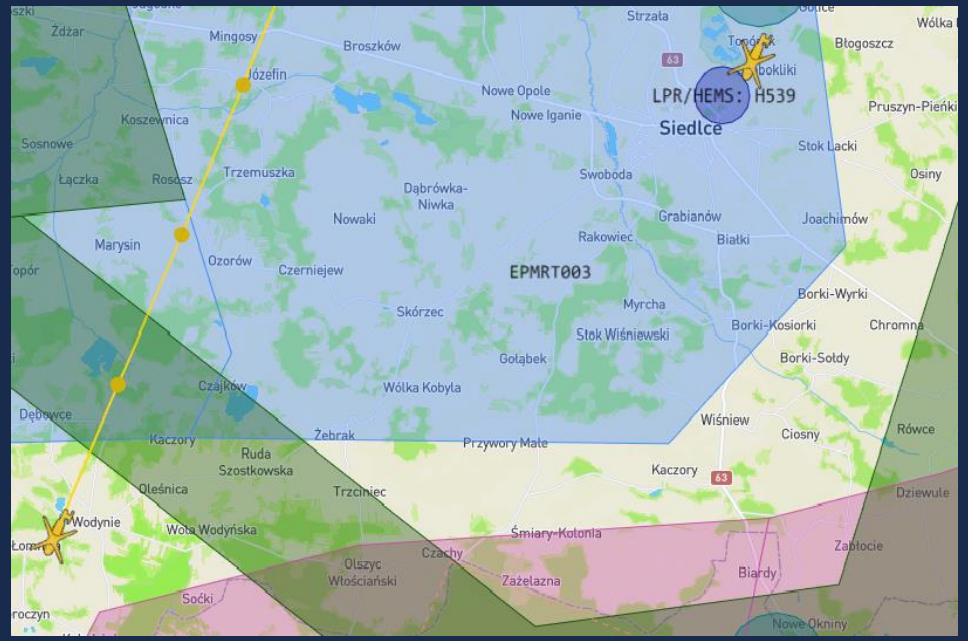
**RTDM_CREOTECH_AIRCRAFT**

| | |
|---|---|
| Callsign: | LAB_008 |
| Squawk: | null |
| Altitude: | 525 |
| Speed: | 40 |
| Vertical speed: | 0 |

# Tools supporting UAS operations at/near Aerodromes – drone corridors



# Tracking

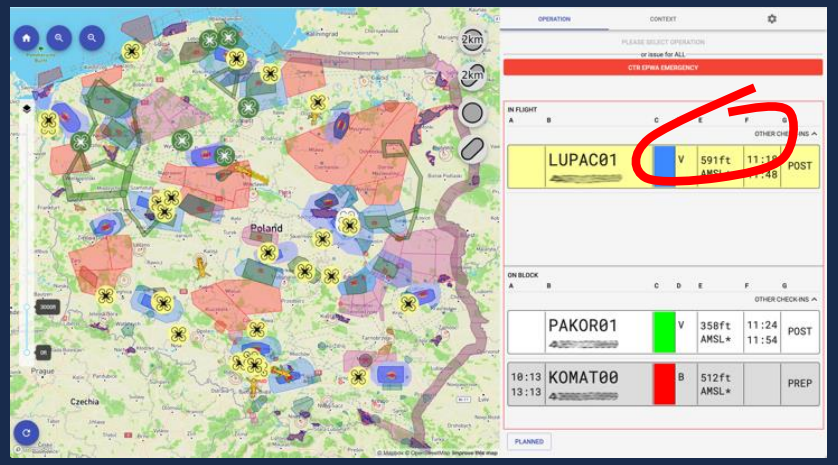


Real time tracking capabilities implemented in PansaUTM (ADS-B, FLARM, LTE, IRIDIUM (used by HEMS helicopters)

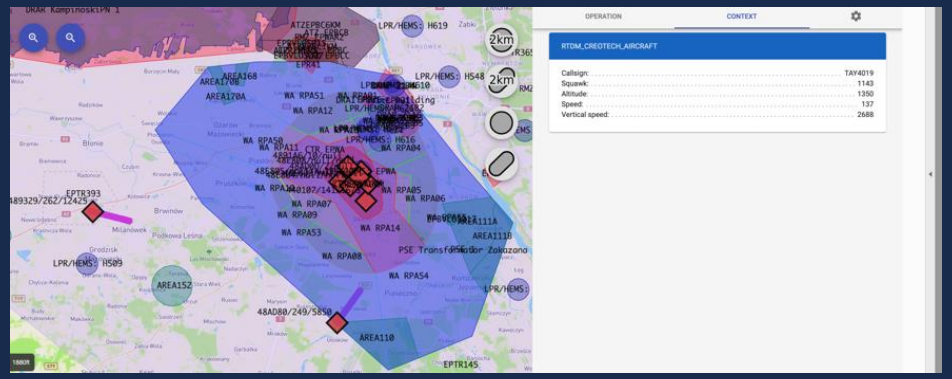
**RTDM_SOAP_LPR_UNITS_TICK**

| | |
|---|---|
| Registry: | SP-DXC |
| Callsign: | Ratownik 19 |
| Origin: | Sokołów Podlaski |
| Status: | 2 |
| Status description: | In place |
| Speed: | 111 |
| Altitude: | 1050 |

# e-Identification




Procedural e-Identification




Live e-Identification via ADS-B transceivers

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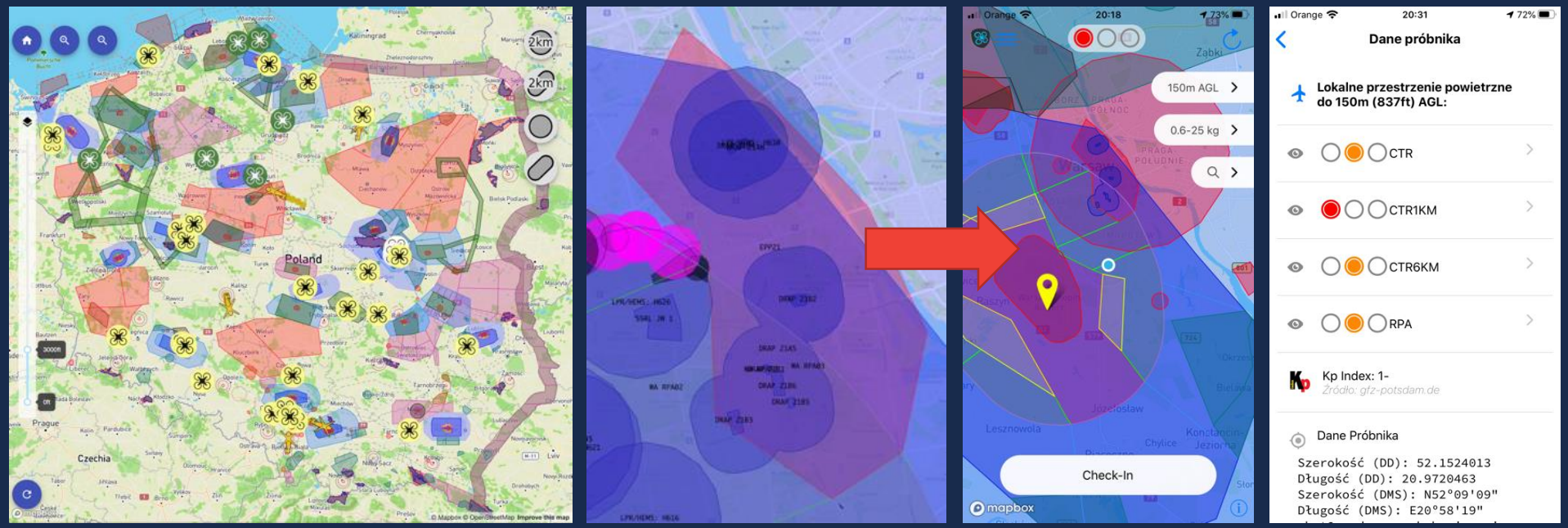
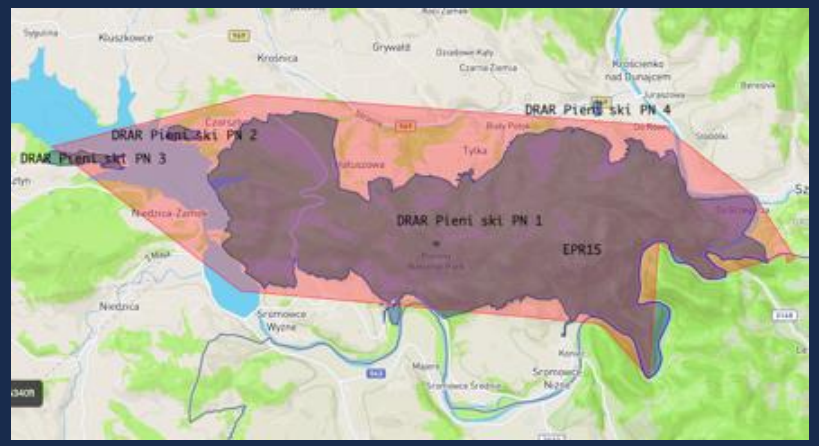
DroneRadar application

Can be used also via ADS-B

The general principles of ATC are the same regardless of whether **procedural** or surveillance methods are used (i.e. the controller monitors the traffic situation, detects and solves conflicts by providing separation, and ensures orderly flow of the air traffic). The difference lies in the way situational awareness is built and updated (**by pilot reports, estimates and visual observation**), the separation minima themselves (as described in ICAO Doc 4444, Chapter 5) and the support tools (flight strips instead of a situational display)

# Pre-tactical geofencing

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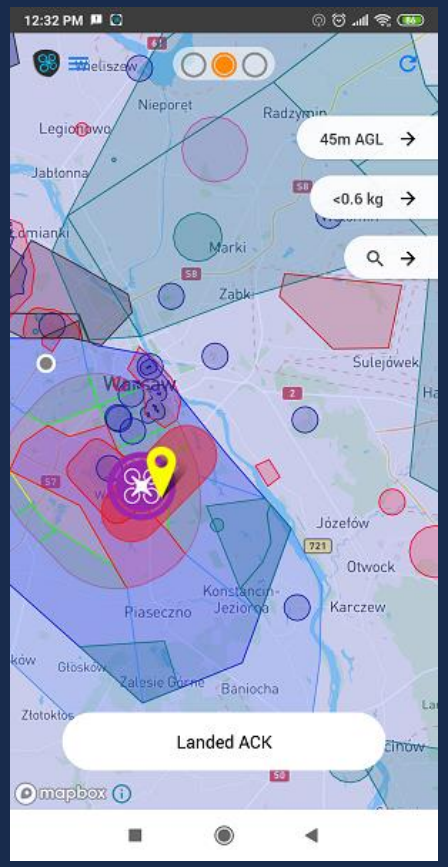
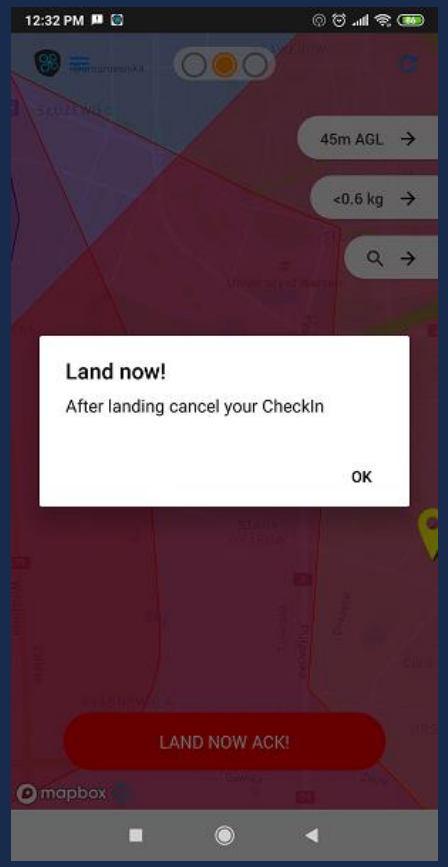
Visualisation of static and dynamic elements of the airspace structures issued in AIP or NOTAM including pre-defined restricted areas and FUA. Feed to UAVs embedded geofencing features not implemented, however there is a technical possibility - it requires willingness to enable cooperation from UAVs manufacturers and applicable standard

# Dynamic/tactical geofencing

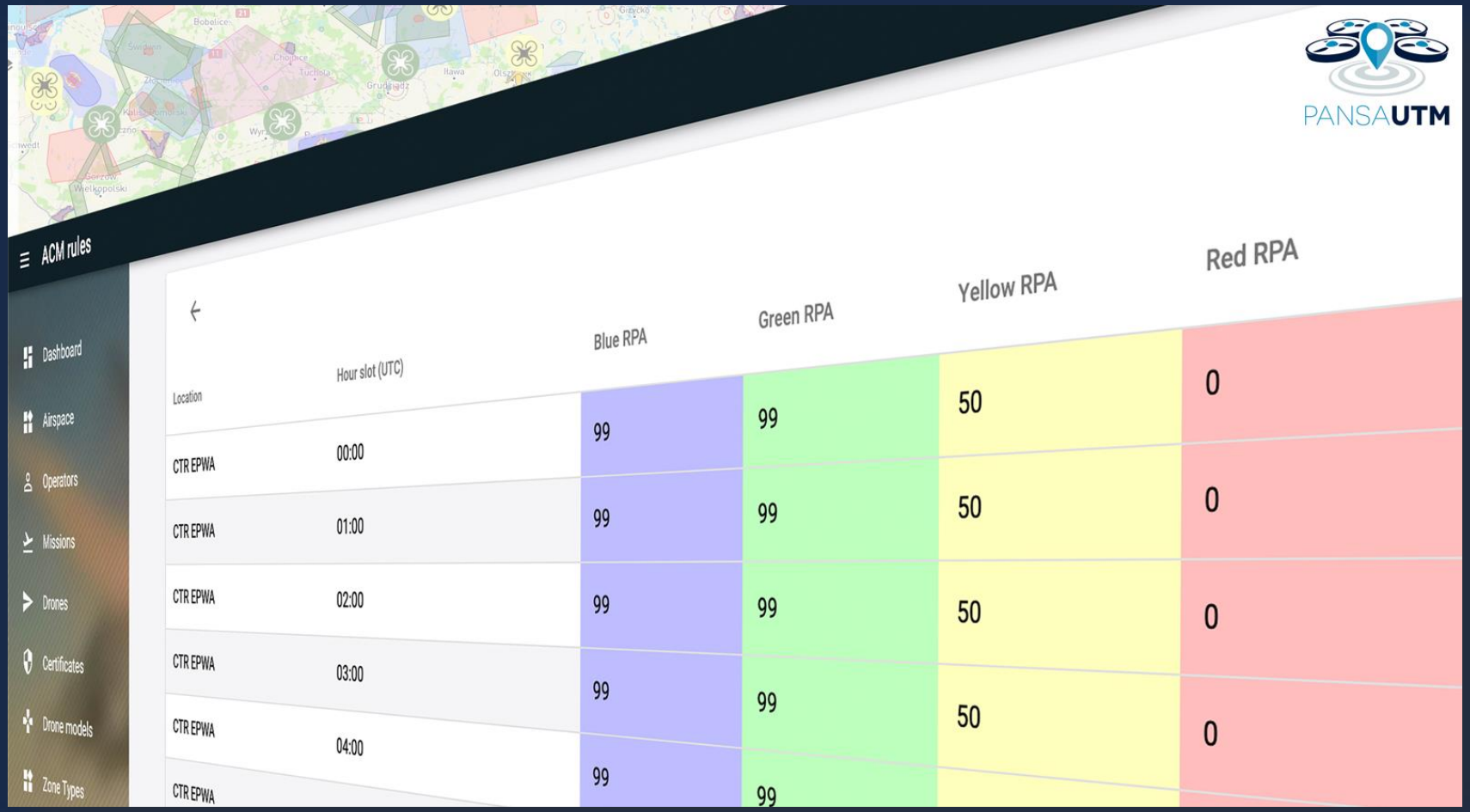
Information to UAVs operators is provided dynamically right after the creation of the dynamic geofence

Available in PansaUTM. Dynamic geofencing function ordering UAVs to land



# Dynamic capacity management

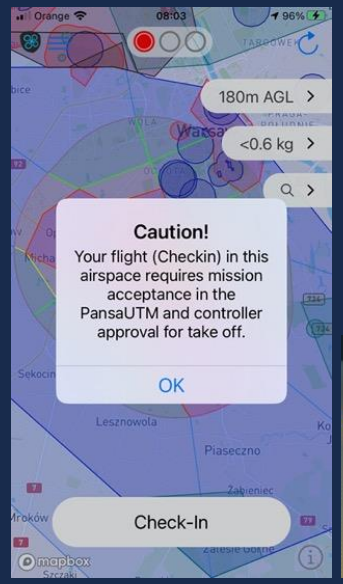


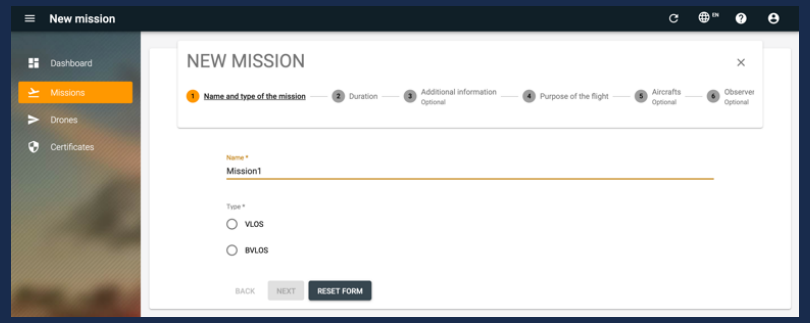

Airspace capacity and automatic capacity management implemented in PansaUTM. Possibility to change capacity and introduce automatic approvals in real time. It reduces the workload of ATC

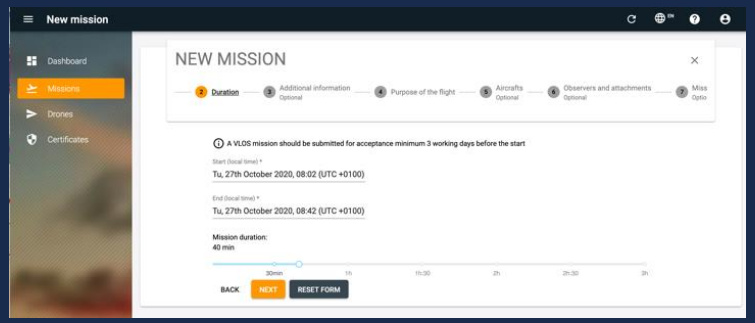
**Possibility to reduce capacity in CTRs depending on the time of the day**

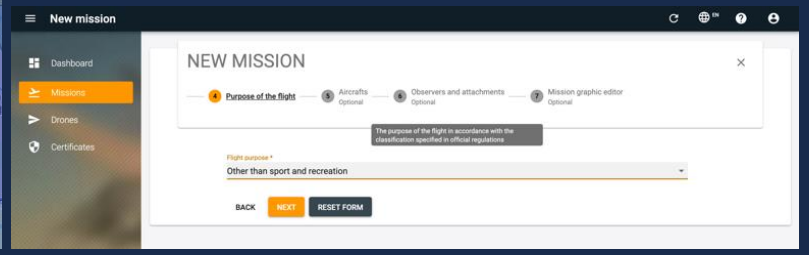
PansaUTM has a distinction between issuing automatic UAVs flight authorisations depending on the location, height and time – some are accepted automatically by the system, some require pre-tactical coordination and then the manual approval of ATC

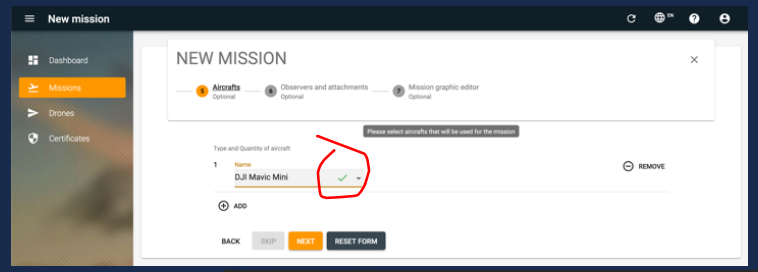
# Flight plan management



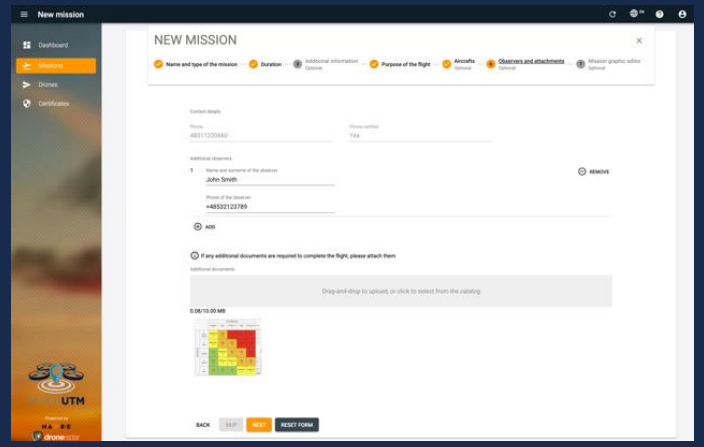



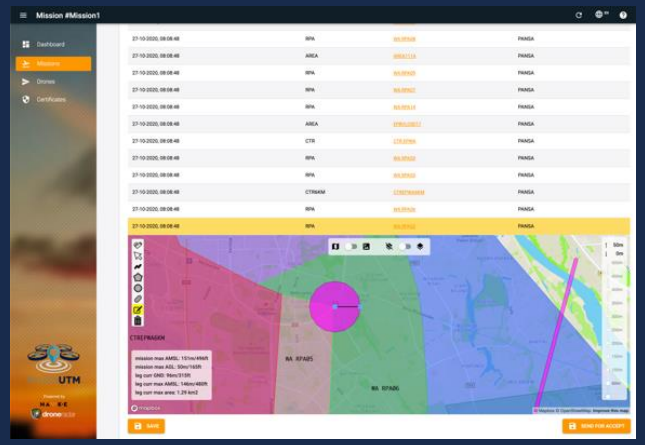



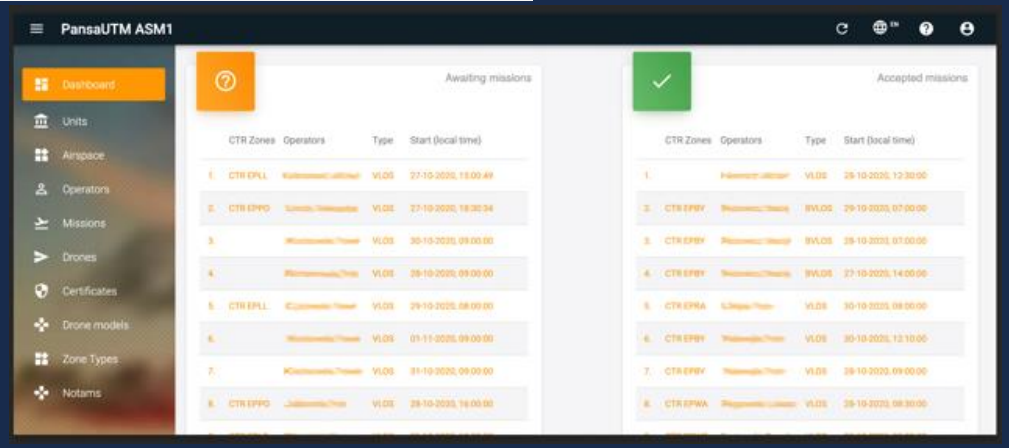



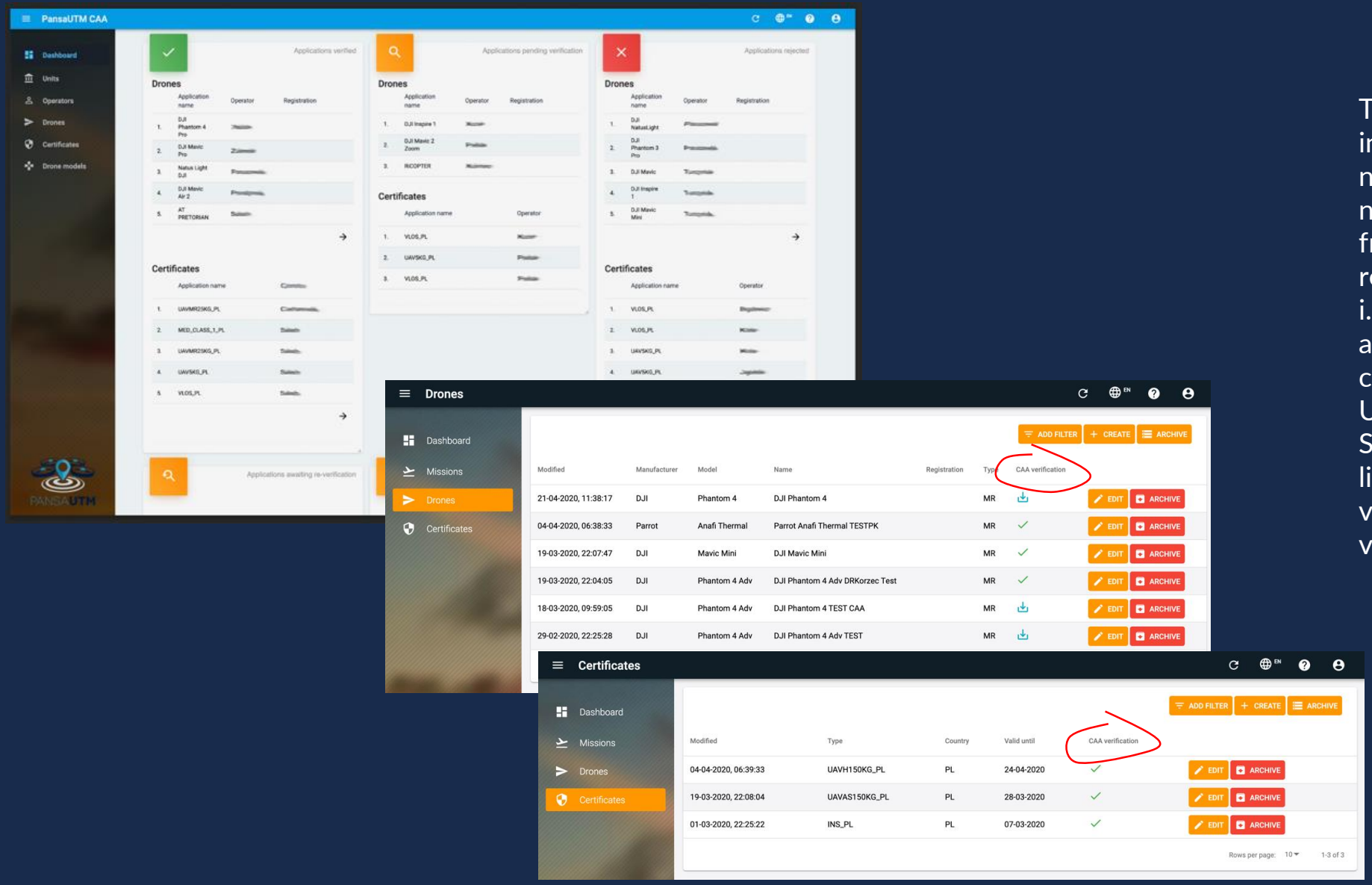

Airspace authorisation and flight planning and flight approval/authorisation processes available



# e-Registration




The e-Registration module used in PansaUTM fulfills the current national requirements and the new requirements resulting from EU 947 Regulation regarding the Specific Category, i.e. attaching operational authorisation issued by the competent authority or Light UAS Operator Certificate (LUC), STS. PansaUTM supports the link between CAA and ANSP – via built-in workflow and verification scheme

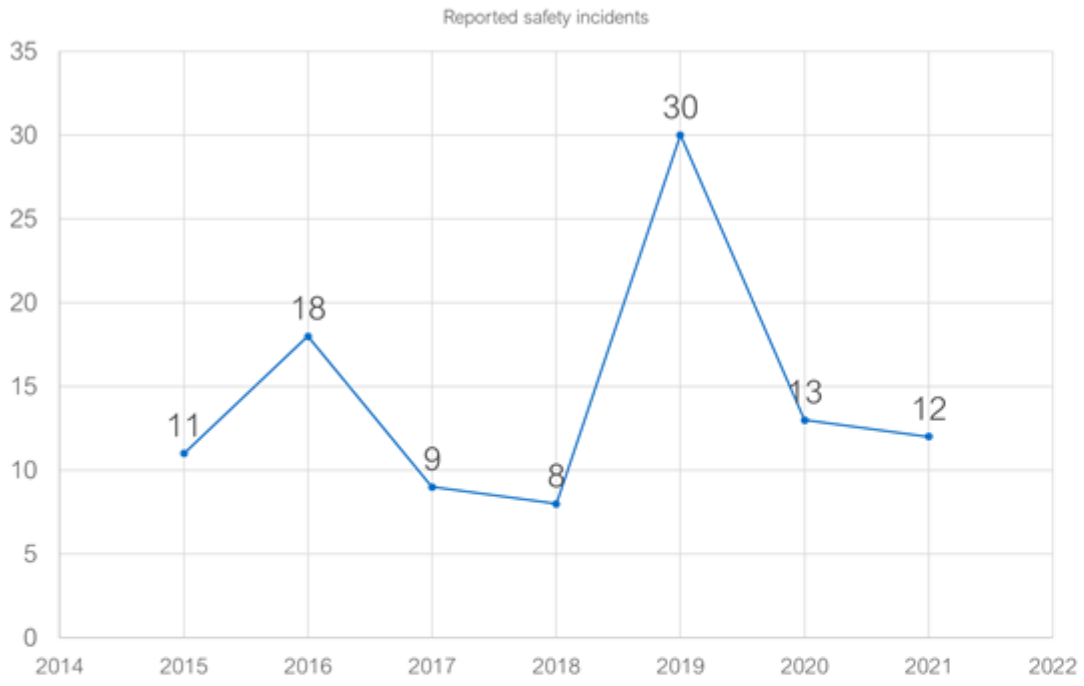
# Geographical zone management – airspace for UAS in Poland after entering into force of EU 2019/947

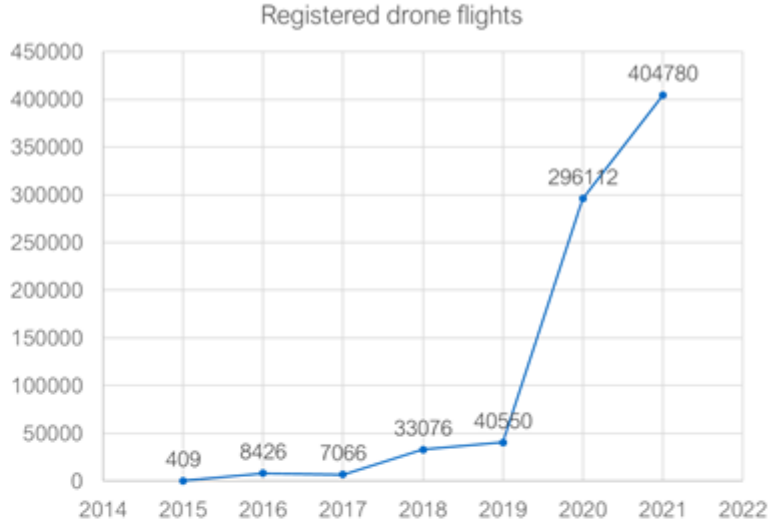
## GOEGRAPHICAL ZONES TYPES

- **DRA-RH** - restricted area for UAS with a high probability of obtaining approval for the operations referred to in the introduction to the calculation,
- **DRA-RM** - restricted area for unmanned aerial vehicle systems with average probability of obtaining approval for the operations referred to in the introduction to the calculation,
- **DRA-RL** - restricted area for UAS with a low probability of obtaining approval for the operations referred to in the introduction to the calculation;
- **DRA-P** - prohibited area for UAS, in which UAS operations cannot be performed;
- **DRA-I** - information area for unmanned aerial vehicles, containing information necessary to ensure the safety of operations with the use of unmanned aerial vehicles, including navigational warnings;
- **DRA-T** - a restricted area for UAS, in which UAS operations may be performed only with the use of UAS that meet the technical requirements indicated by the Agency and under the conditions specified by the Agency, if such conditions for a given zone have been determined;
- **DRA-U** - a geographic zone for UAS where UAS operations can only be performed with the support of specific, verified services provided in this area and under the conditions specified by the Agency.

# Live situation of all operations like in Poland

# Air incidents vs. operations vs. pilots



Implementation of PansaUTM

2021 - obligatory e-registration at Polish CAA

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# Thank you !

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# Digital Poland Program - POPC

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# Digital Poland Program - POPC

**Objectives**

Operational Programme Digital Poland aims at increasing the availability of the high-speed Internet, establishing a citizen-friendly e-administration which will make it possible to resolve various issues via a computer and continuously rising the level of digital competences of the society. The main objective is to strengthen digital foundations for the national development.

**Priority axes**
Three priority areas were distinguished in the Programme:

- Common access to high-speed Internet,
- E-government and open government,
- Digital competences of the society.

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# Digitalisation of processes concerning drones

E-services being developed to complement UTM ecosystem

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## Digitisation of administrative processes at Civil Aviation Authority

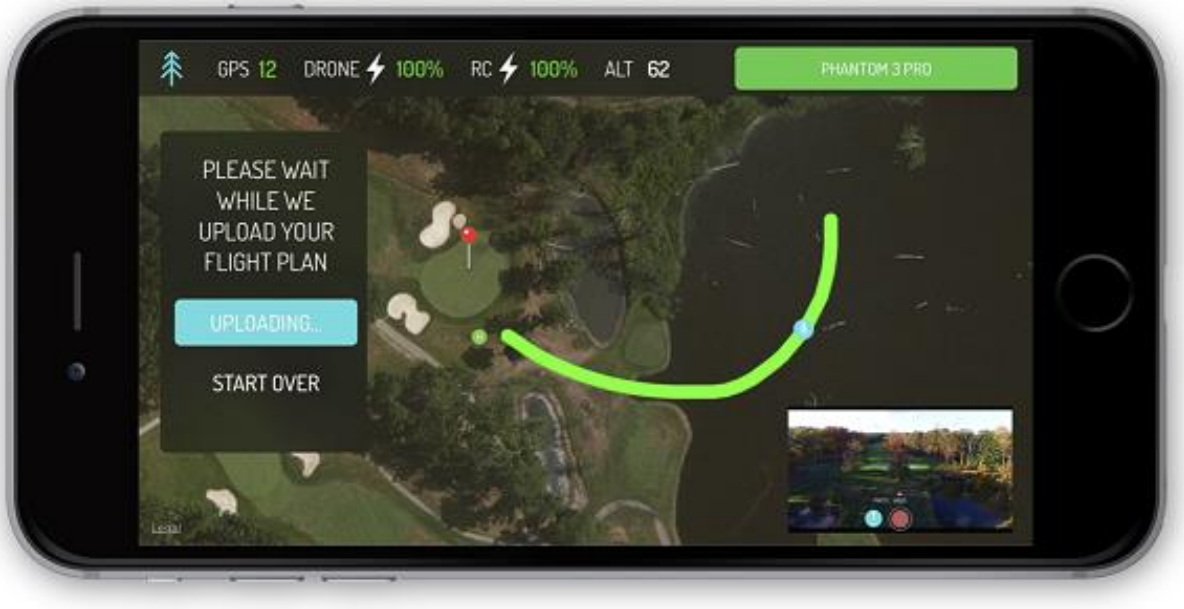
*(registration of drones, granting permissions and ratings to drone pilots)*

# Digitalisation of processes concerning drones

E-services being developed to complement UTM ecosystem

## e-identification service

*(the possibility of online verification of the legality of the drone flight by the Public order Services)*




**Feedback**

**LEGAL flight**

**ILLEGAL flight**

**On-line flight verification**

# Digitalisation of processes concerning drones

E-services being developed to complement UTM ecosystem

## „Dynamic safety and security”

**Digital support of public order services in securing e.g. Secre Service/ Police, Board Guards for the needs of e.g. VIP security, mass events, gatherings and crisis management**

**State buildingds**

**Wild fires**

# Thank you !

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