



# ENjOy

## EgNos based flight Operations



AALTRONAV



- **ENjOy** (EgNos based flight Operations) started on **1<sup>st</sup> March 2021** funded by [GSA Grant 06/2017] aiming to foster operational use of EGNOS in aviation
- Duration: 20 months (extended to 32M)

Design and publish Performance Based Navigation (PBN) approach flight procedures based on GNSS, specifically EGNOS enabled (LPV and LPV200)

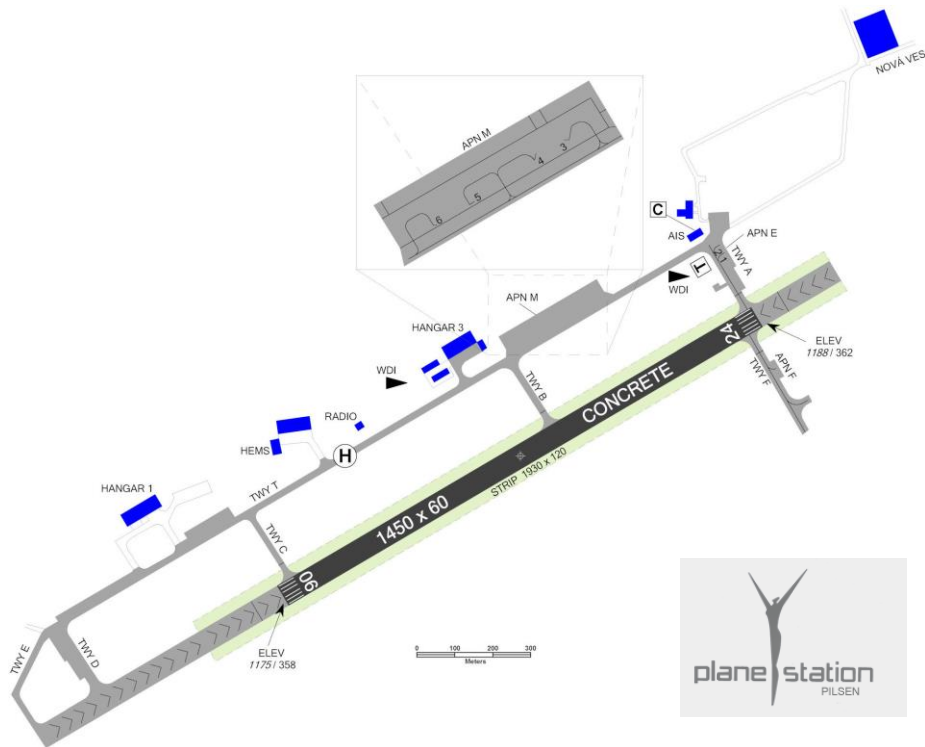
Retrofit aircraft operators' fleets with SBAS/EGNOS avionics to allow supplemental airworthiness type certification for RNP APCH procedures down to LPV minima

Developing and demonstrating technical and operational feasibility of enablers focused on GNSS monitoring and RFI detection in real operational environments



# LKLN – Plzeň-Líně Airport

- Aerodrome property of CZ Army
- PSP is operator of LKLN AD (certified by CZ CAA)



- International non-scheduled and domestic public AD
- Concrete RWY 06/24; currently 1500m, potentially 2500m
- **VFR only**
- Airspace Class: G
- No lights
- Currently RADIO service
- **No AFIS**
- Regional HEMS, flight school, skydiving, aeroclub and day-VFR flights

# Why Radio service and not AFIS?

## EASA Basic Regulation 2018/1139

Recital 7. Aerodromes which do not serve commercial air transport should remain under regulatory control of States, without any obligation on other Member States to recognise such national arrangements

### Art. 2(7)

States may exempt from EU Regulation operation of an aerodrome, where that aerodrome handles no more than 10 000 commercial air transport passengers per year and no more than 850 cargo movements per year, provided that such exemption does not endanger compliance with essential requirements

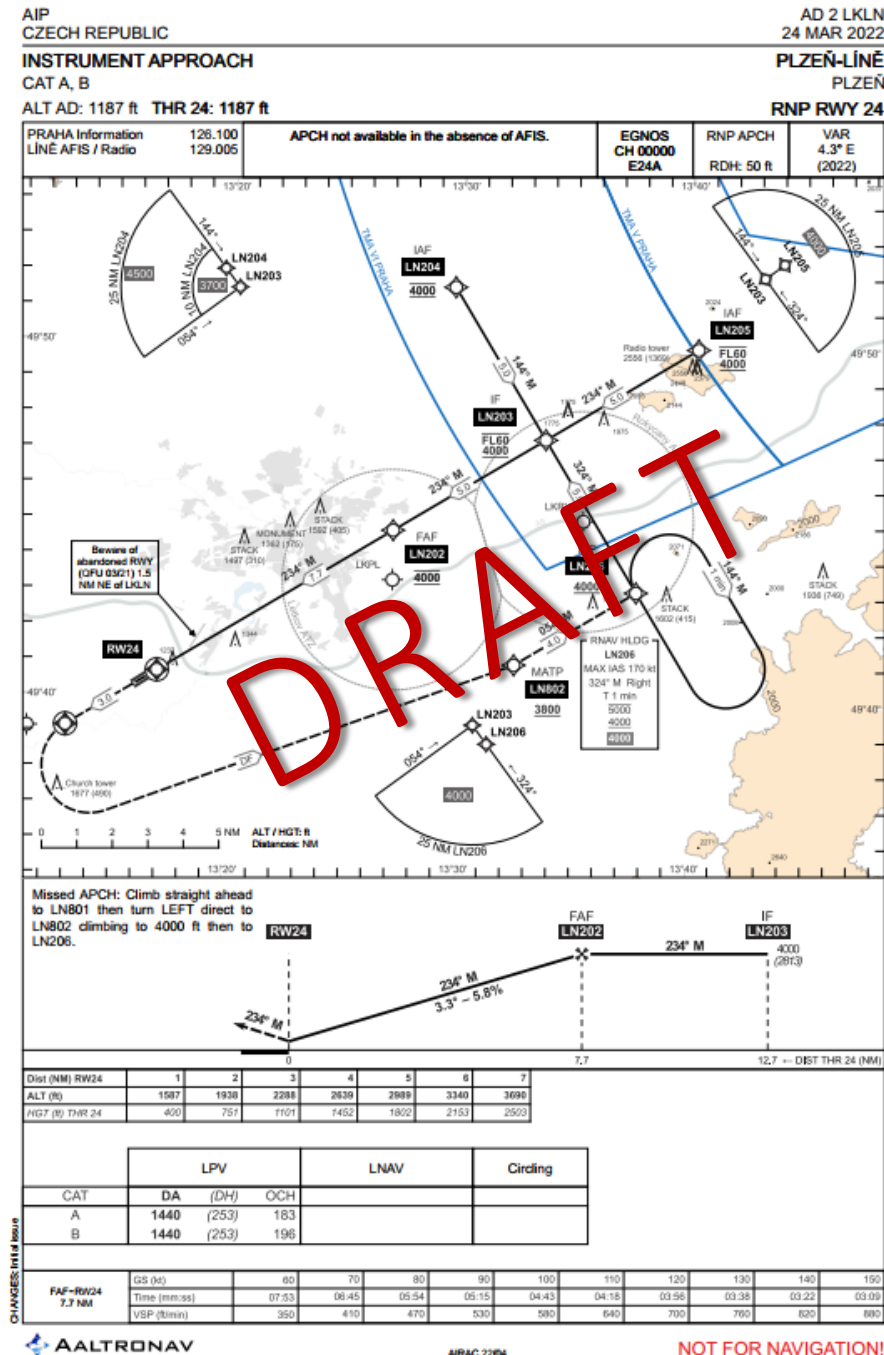
- Regional aerodromes and related AFIS excluded from EASA competence in 2009 (Reg. 1108)
- EASA rules at the time not proportionate for small organisations
- ‘manned’ AFIS too costly for regional aerodromes
- CZ established rules on simplified ‘radio service’
- Coordination established with Czech CAA in Enjoy... but difficulties since semantics and rules in different EU States are different
- Currently 2018/1139 is performance-based and risk-based ... reconsider?

# IFP Design task

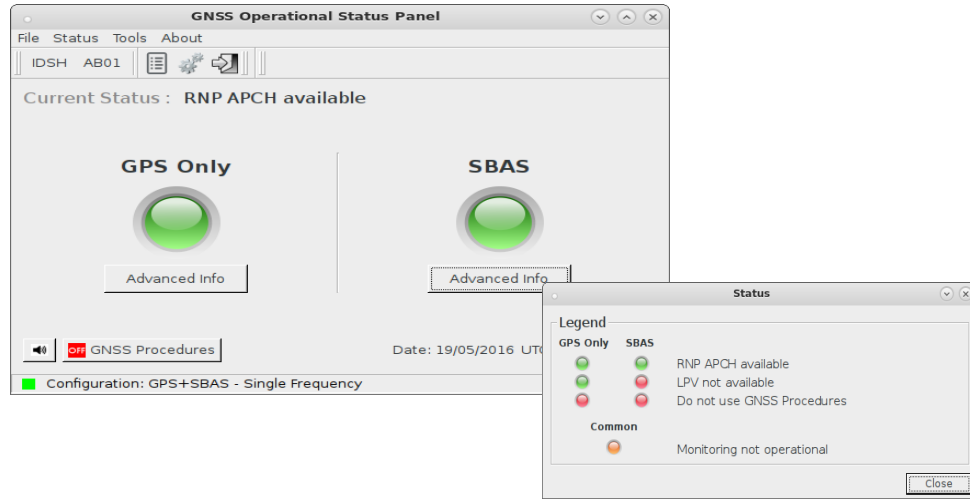
Design (by Aaltronav), validation and data coding of RNP APCH Flight procedures with LPV / LPV-200 minima

- Determination of IFR operational requirements at Plzeň-Líně airport (**done**)
- Design of instrument flight procedures at Plzeň-Líně airport, including at least one LPV approach to each runway end (**drafted**)
- Review and assessment of conceptual design with involvement of relevant stakeholders (**Ongoing**)

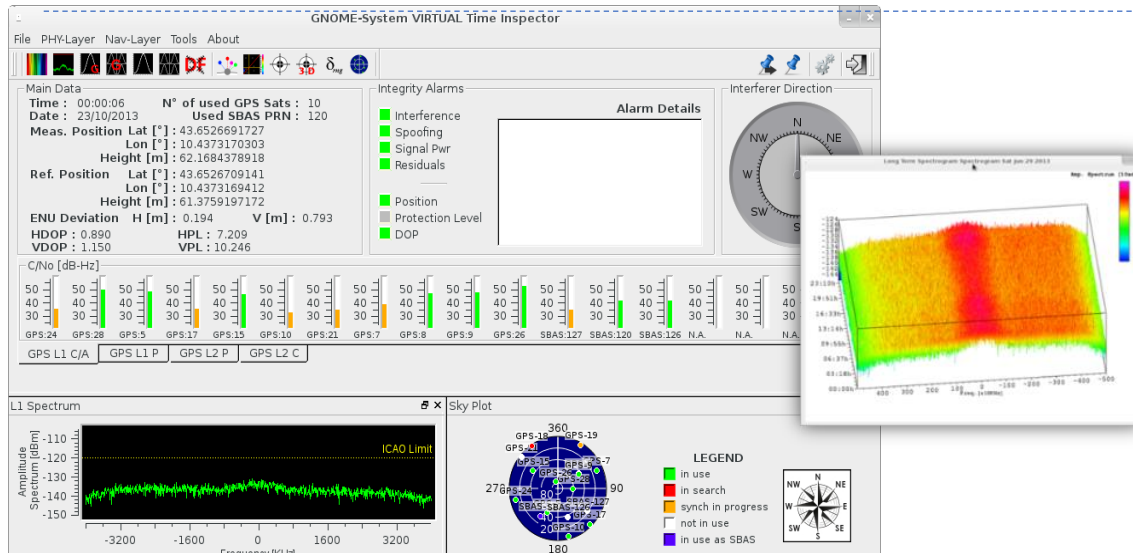
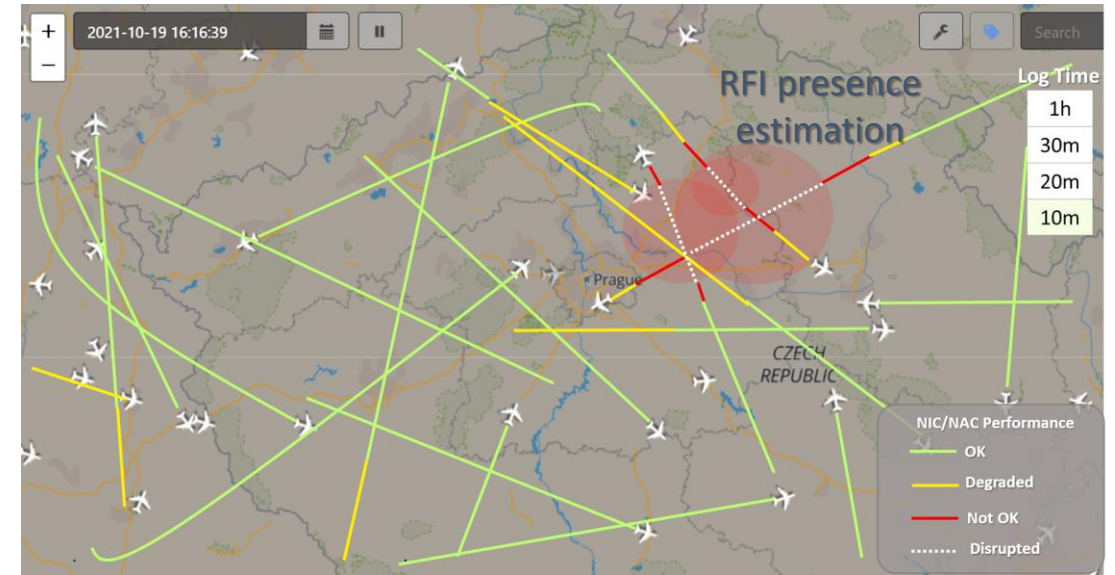
Please do not underestimate **Obstacle survey impact!** (ADQ, large areas to be surveyed,...)



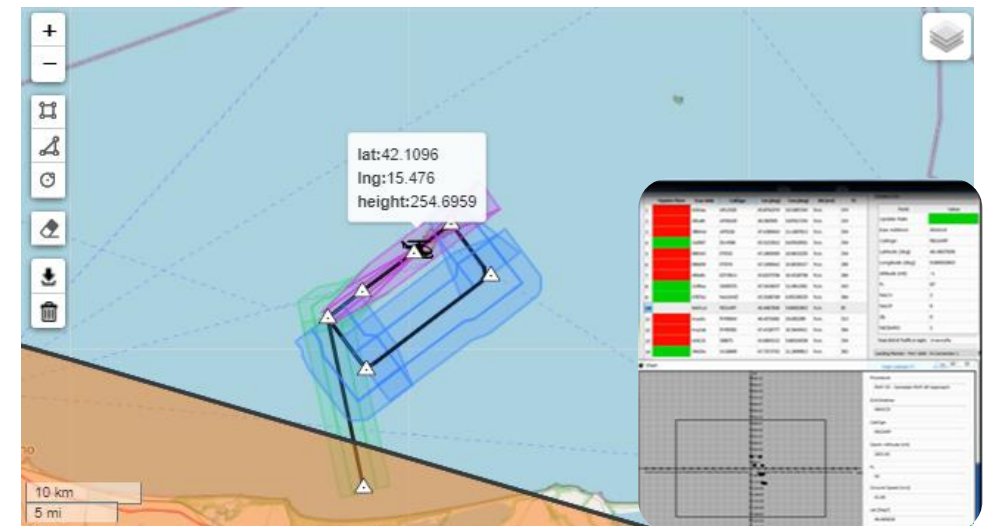
## GNSS procedures usability



## GNSS area performance through ADS-B (NIC&NAC<sub>p</sub>)



## GNSS performance and interference detection



## LPV Approach Path Monitoring



Questions?