CASE STUDY AIRBUS FINKENWERDER AIRPORT (XFW)

WBA Conference Bangkok

29. November 2022

World Birdstrike Association

PROTECBIRD


PROTECBIRD
Focus on Wildlife,
Driven by Technology

In Sep 2022, Airbus Operations selected us to support them to solve a complex problem.

PROBLEM

- 400 TAL per month
- Nature reserve areas
- >6,000 resting birds during autumn
- Noise emission restriction
- Changing weather conditions
- Deterrence, especially during dawn and dusk (human factor)

AI-BASED NETWORK OF AUTONOMOUS DETERRENCE SYSTEMS

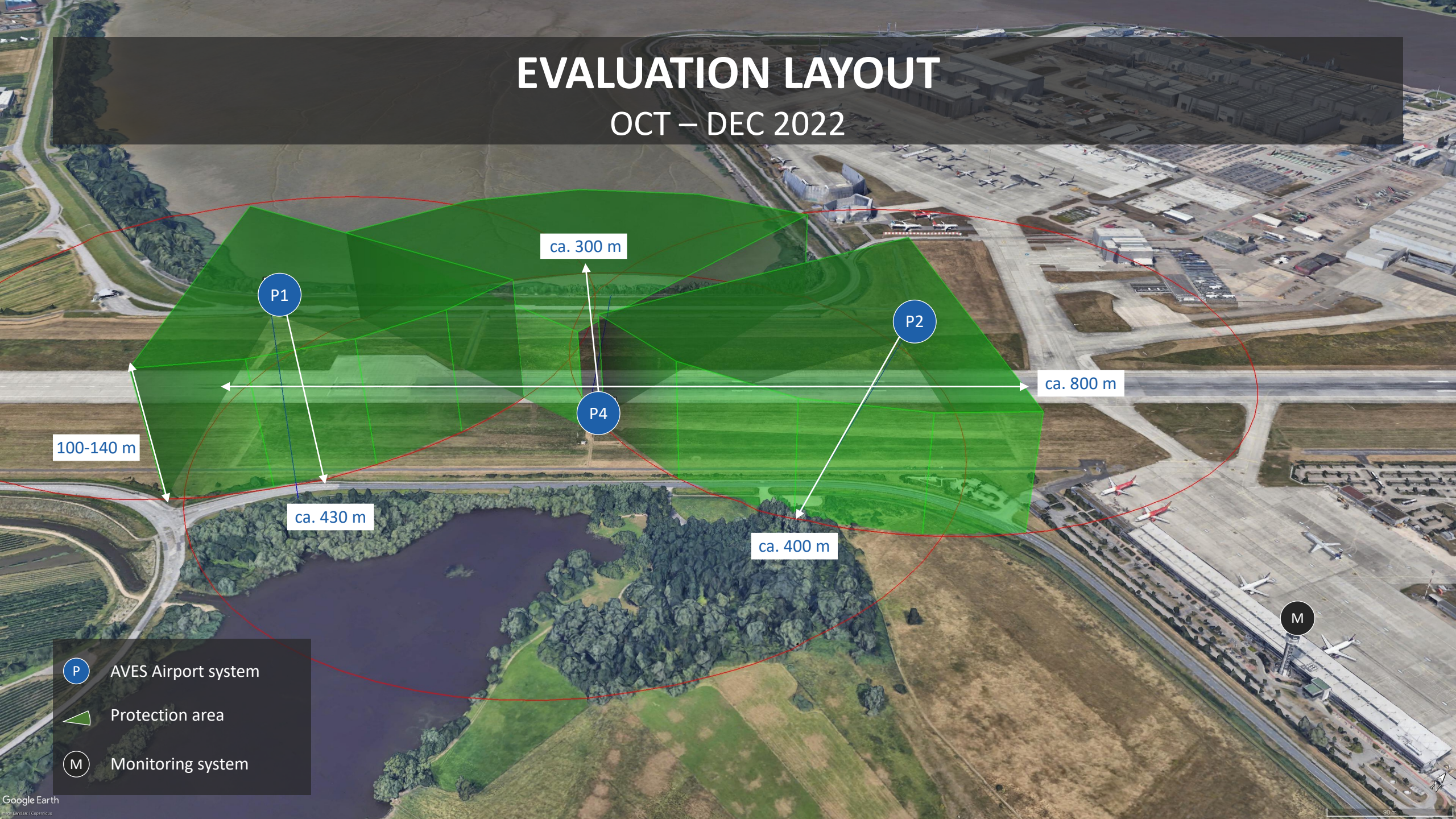
AVES AIRPORT

KEY FEATURES

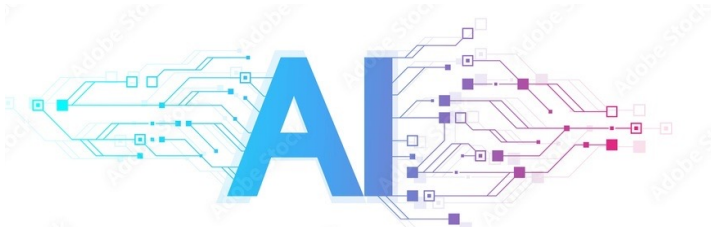
- Detection, tracking and deterrence based on AI
- Autonomous operation enhanced by ADS-B receiver
- Large area protection at day and night
- No habituation due to event-related deterrence
- Speaker design enables intense sound bundling
- Automatic event documentation and analytics

EVALUATION LAYOUT

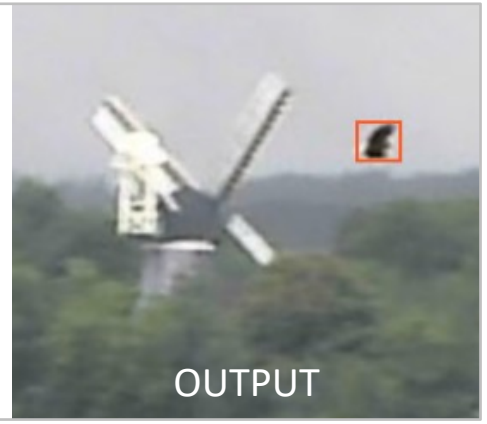
OCT – DEC 2022



AI TECHNOLOGY

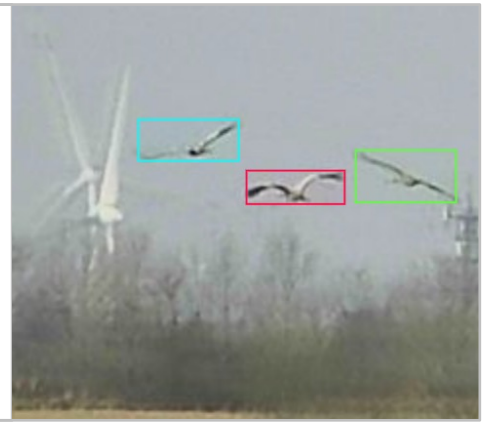


- Bird / target-species
- Non-target species



Constant labeling of birds: position, size, species

Our AI contains ~2 Million labels with high variance



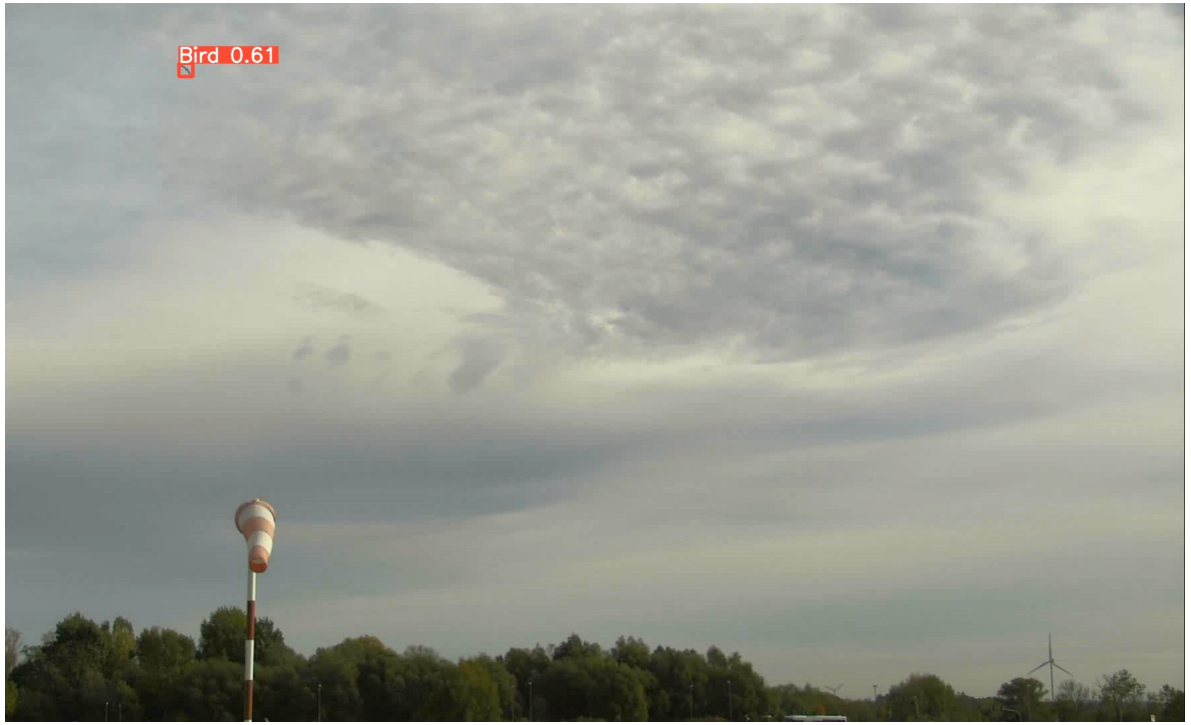
Tailor-made models for:

- Day, night, twilight
- Weather conditions
- Locations
- etc.

AI TECHNOLOGY

EXAMPLE FOR ON-SITE IMPROVEMENT (WINDSOCK)

BEFORE



AFTERWARDS

FIRST RESULTS AS OF NOVEMBER 2022

DOCUMENTED BY ORNITHOLOGISTS (6 DAY PERIOD)

	Dawn	Daylight	Dusk
Quantity of birds migrating protected areas per day (counted by ornithologist)	>650	>1,500	>900
Current detection rate of AVES Airport System (average)	68%	73%	54%

The behavior of birds at sound emission (deterrence):

- Gooses = climbing to a higher flight level
- Ducks, hawks, crows, and seagulls = change of flight paths
- Resting birds at nature reserve areas = no change in behavior

FIRST CONCLUSIONS

Intensive training of AI for on-site conditions, especially during dawn and dusk

Compliance with noise pollution limits at the factory site and neighborhood

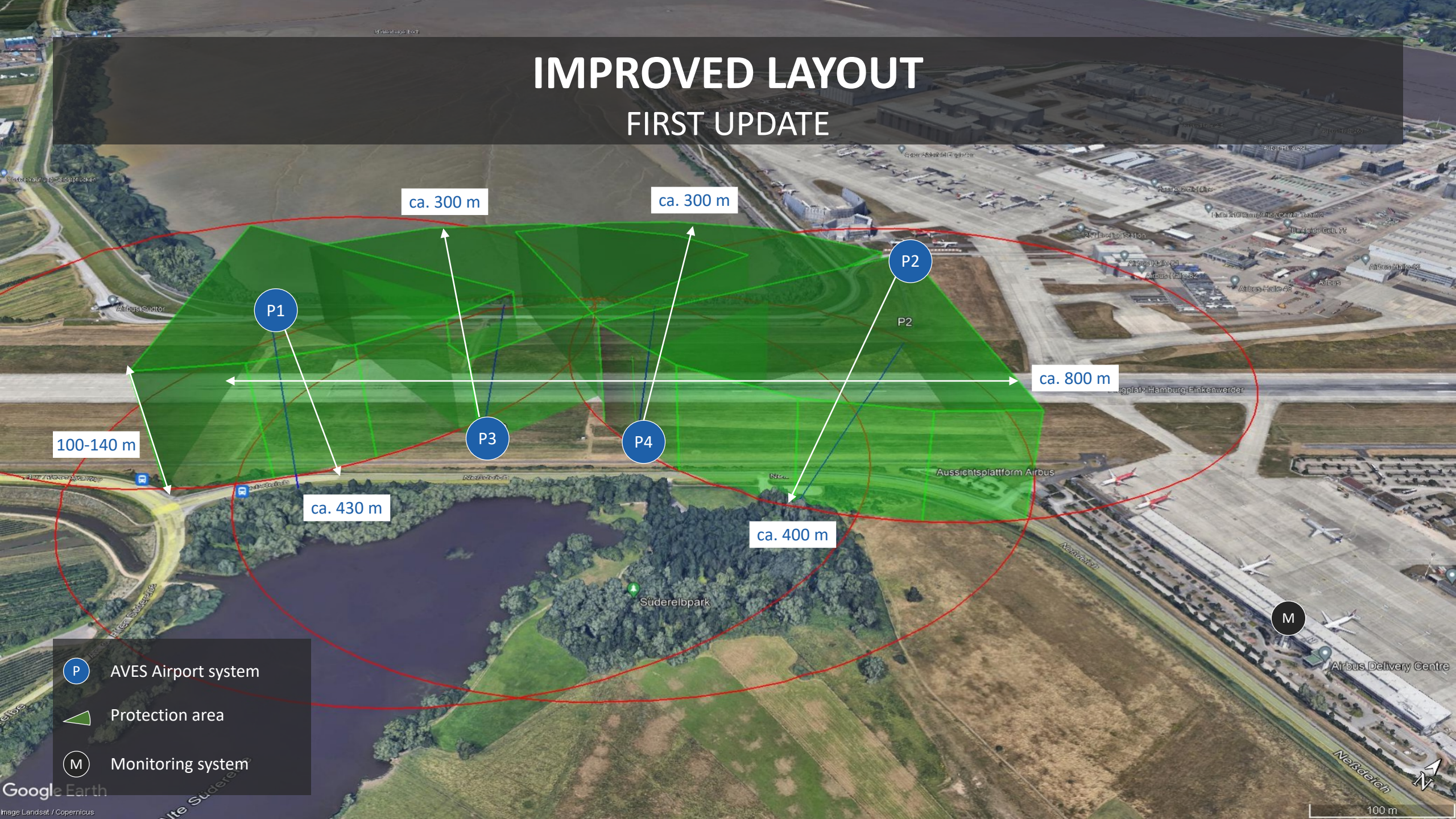
No disturbance of resting birds in the nature reserve area

Control of bird‘s flight path

Layout optimization: additional AVES Airport system and networking

IMPROVED LAYOUT

FIRST UPDATE



THANK YOU

FOR MORE INFORMATION, PLEASE SEE US AT OUR BOOTH