MADE IN FRANCE

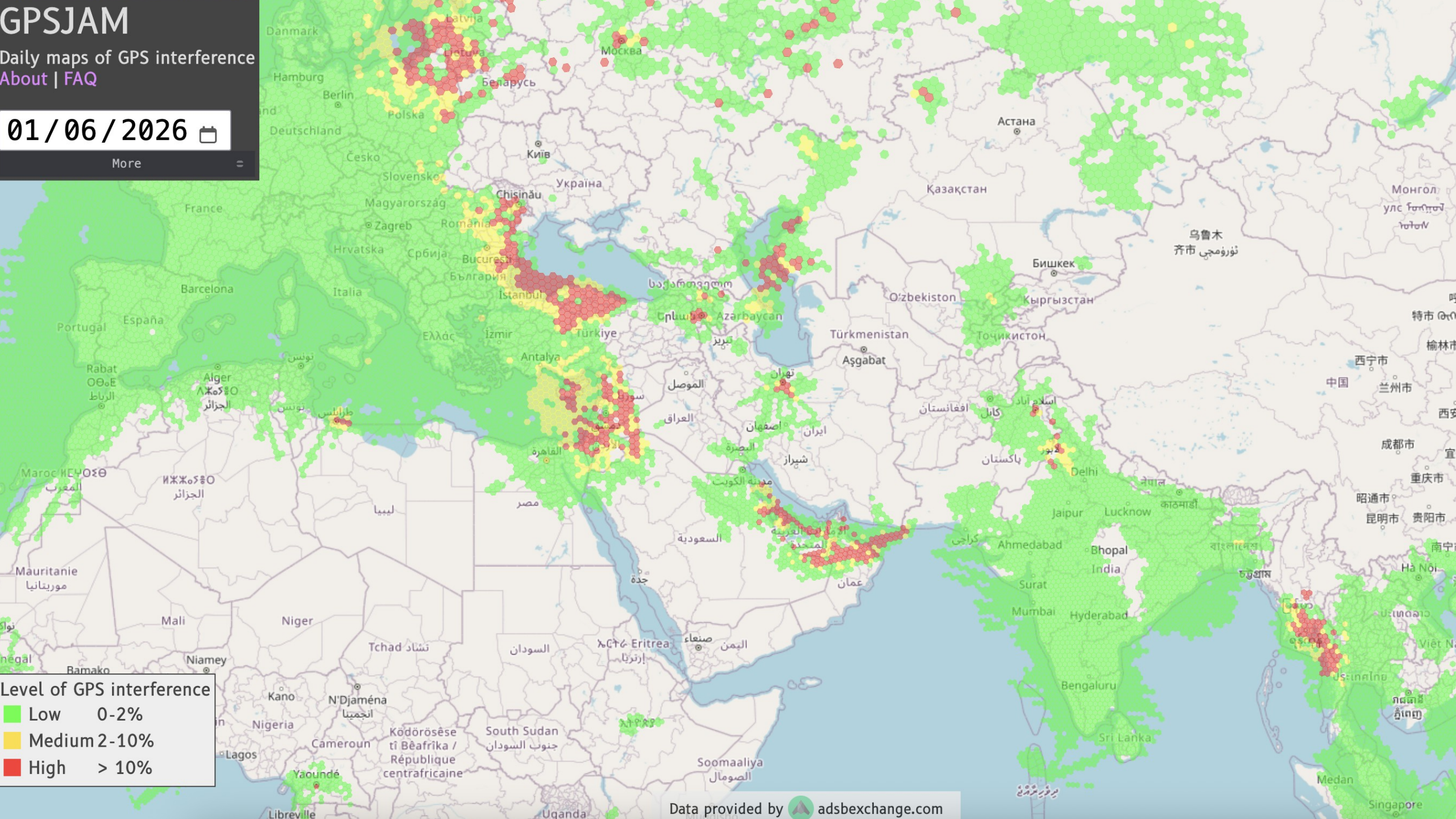
ITAR Free

NAVI GATE I N GNSS- DENI E W/ TH TRUST

INDO PACIFIC GEOINTELLIGENCE FORUM

2-3 June 2026 | Manekshaw Centre, New Delhi

SBG SYSTEMS

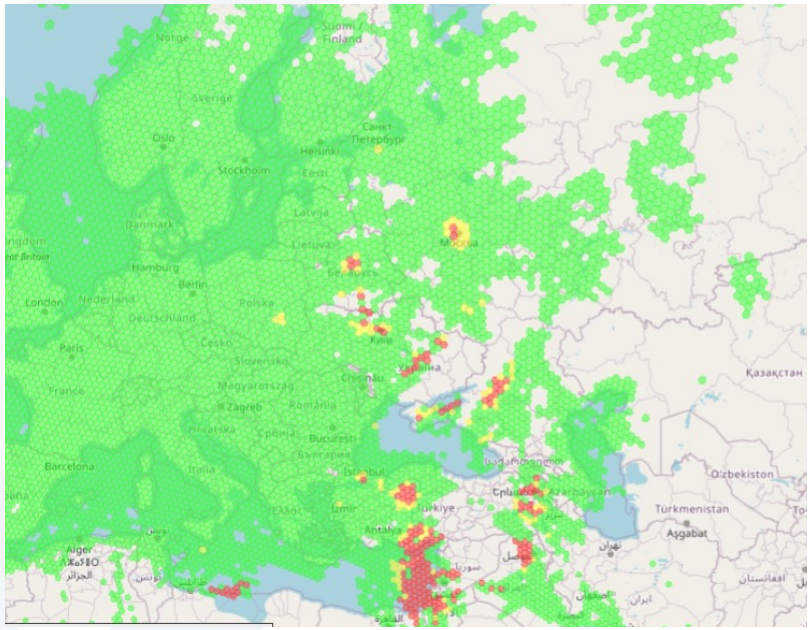

GPSJAM
Daily maps of GPS interference
About | FAQ
01/06/2026
More
Level of GPS interference
Low 0-2%
Medium 2-10%
High > 10%
Data provided by adsbexchange.com

CONTEXT – ELECTRONIC WARFARE

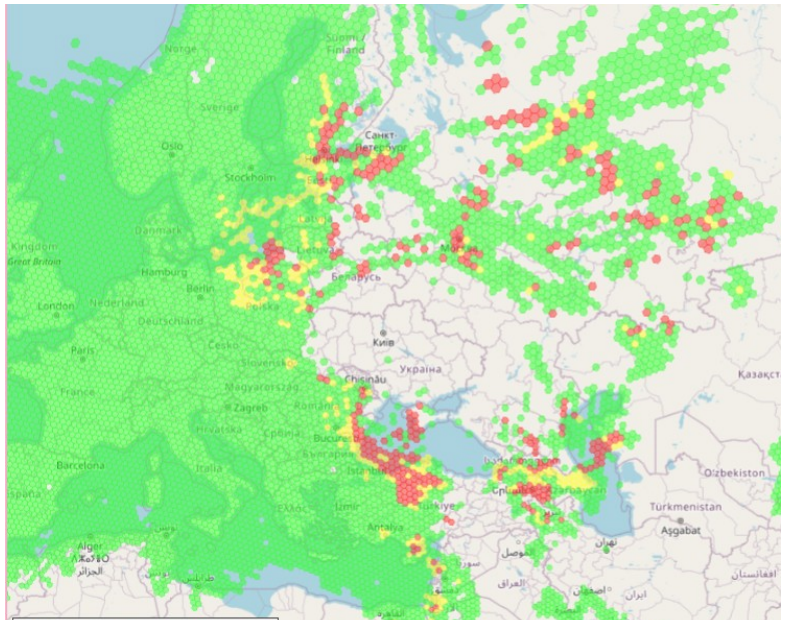
Our customers operate in environments where navigation is actively attacked, not just “disturbed”

GNSS is not a guarantee: it can be missing or misleading

> 900 reported spoofing / day



2022



2026

Level of GPS interference
- Low 0-2%
- Medium 2-10%
- High > 10%

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MECHANISMS OF DEGRADATION

Two primary threats that significantly degrade GNSS and will drive our product strategy

Jamming

Intentional RF interference

Overpowering signals with noise. The receiver "hears" nothing but static.

Signal Lost

Spoofing

Corrupted GNSS data

Broadcasting fake signals. The receiver calculates a valid but false position.

Position Faked

Distinct threats requiring distinct countermeasures

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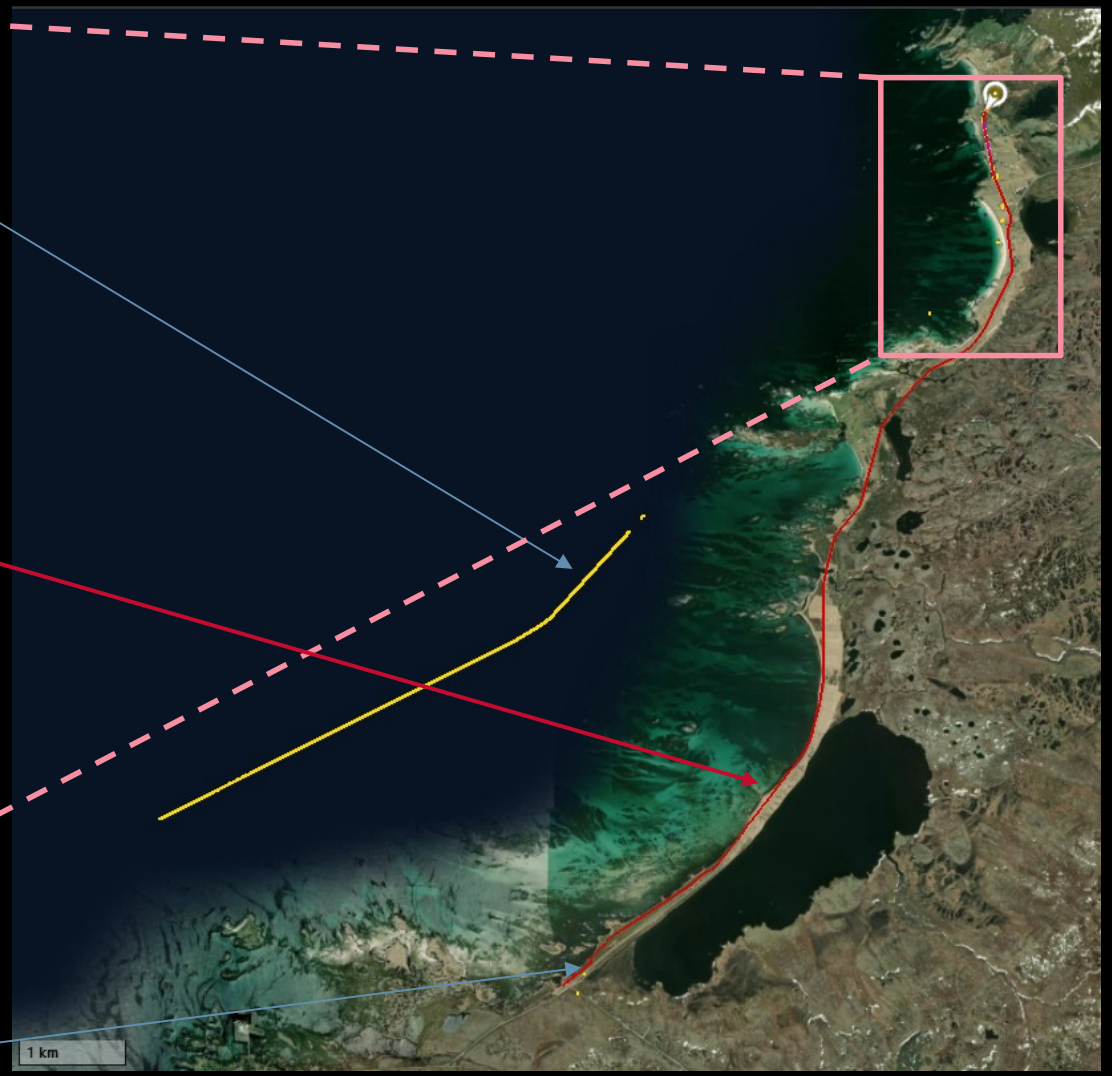
Spoofing resilience – in practice

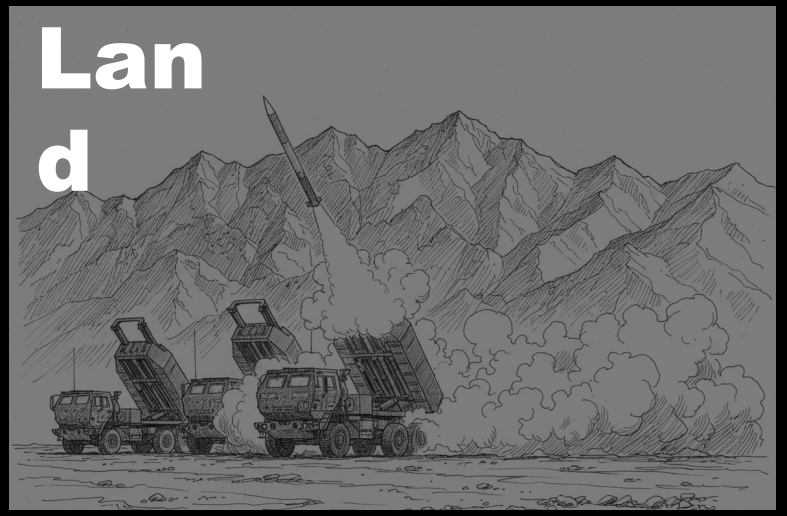
1. Jamming & Spoofing starts
2. GNSS position « lost »
3. Some incorrect fix GNSS
4. GNSS fully Spoofed

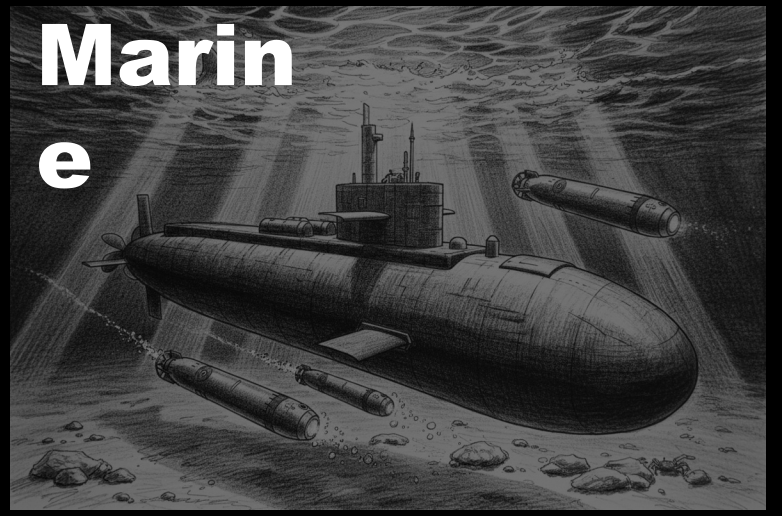
INS trajectory
Not spoofed

5. Spoofing ended



Where does it maters ?





Loi t er i ng Muni t i ons

I SR Dr ones

C- UAS

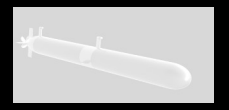
UGV

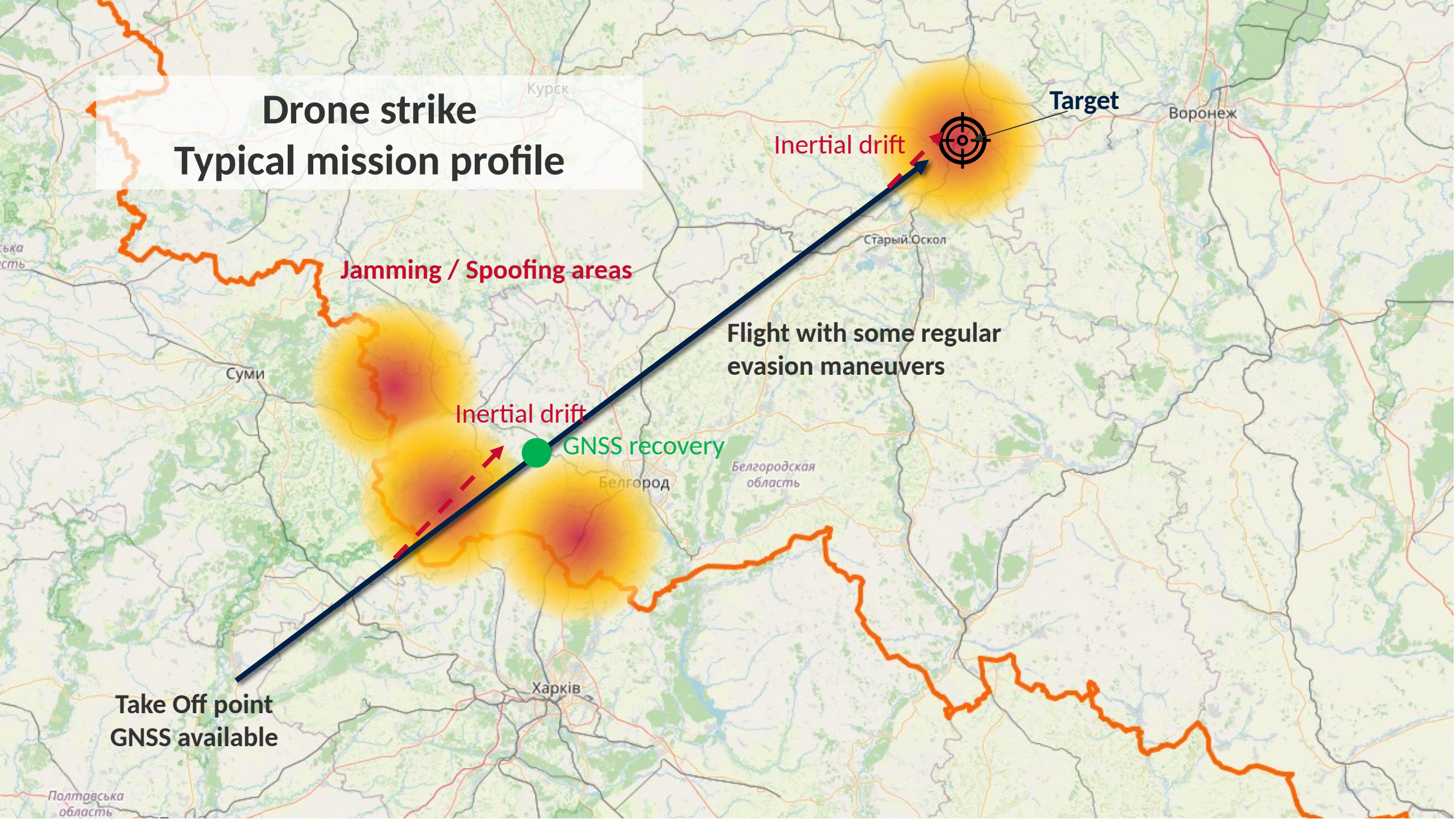
RCWS

Opt r oni cs & Radar

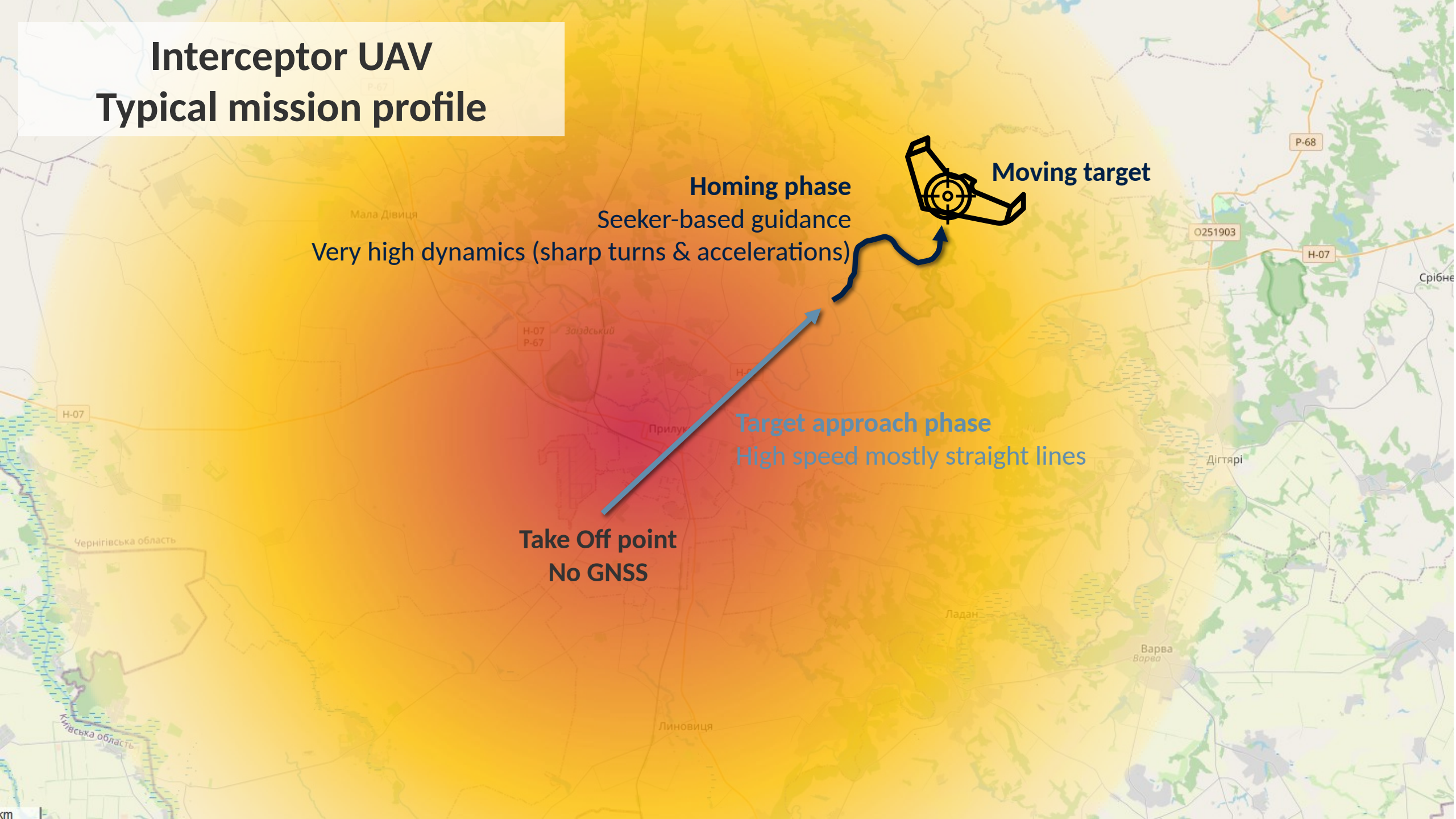
Aut onomous Sur f ace

Aut onomous Under wat er

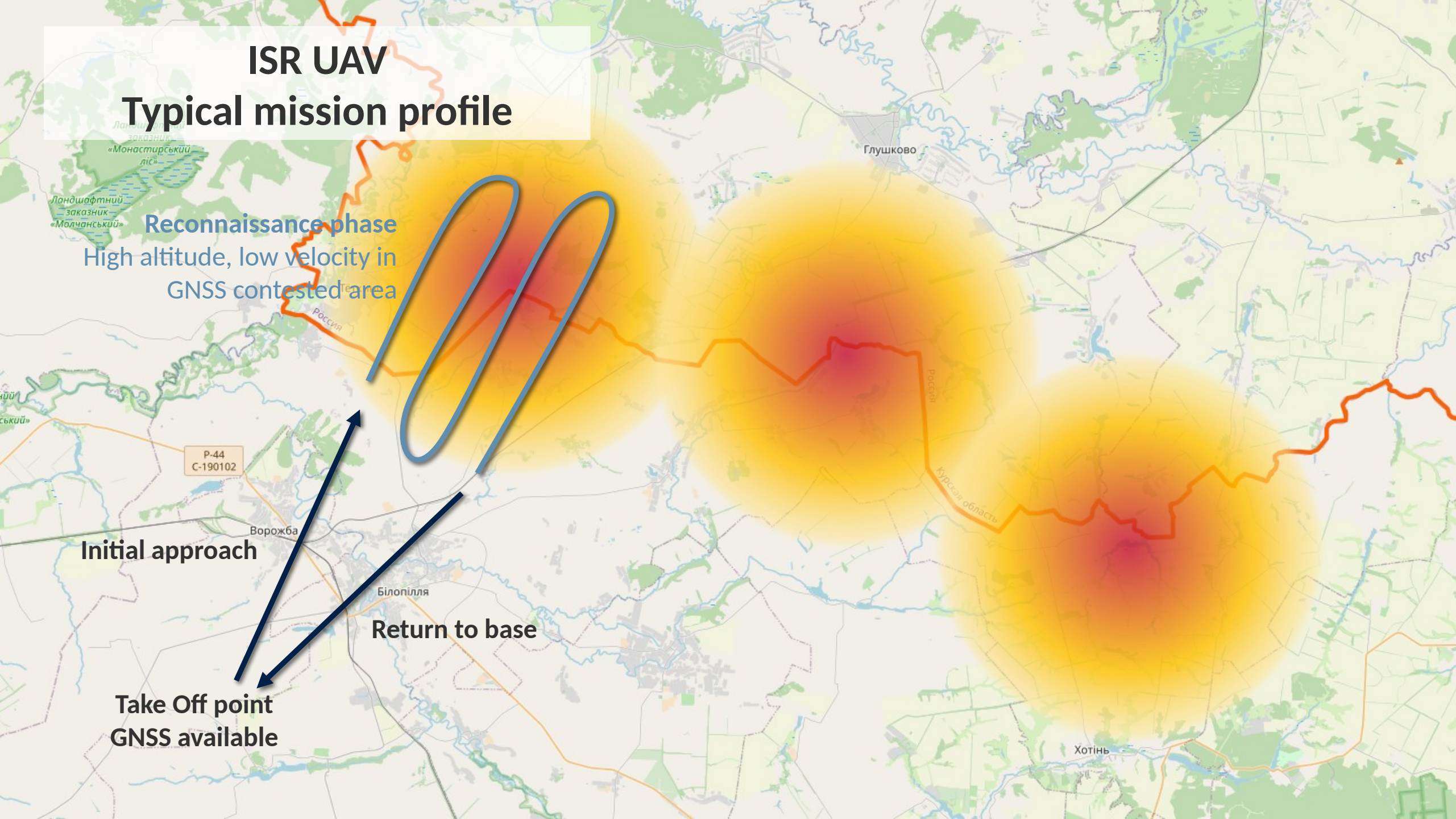



Drone strike
Typical mission profile
Target
Inertial drift
Jamming / Spoofing areas
Flight with some regular
evasion maneuvers
Inertial drift
GNSS recovery
Take Off point
GNSS available
Курск
Воронеж
Старый Оскол
Суми
Белгород
Белгородская
область
Харків
Полтавська
область

Interceptor UAV
Typical mission profile



ISR UAV
Typical mission profile



How do we achieve performance?

Used daily in Ukraine

FIELD PROVEN

Air data aiding
(Airspeed & altitude)

Visual odometry
(generic velocity aiding)

Alternative radio nav / Visual position
(generic position aiding)

IMUs
Calibrated and temperature compensated

Magneto

GNSS

Advanced sensor fusion algorithm

Kinematic model

Advanced rejection engine

Inertial Navigation Systems

LEAN CRP

Antennas

Drivers

PX4 autopilot

ARDUPILOT

Controlling the drone

Autopilot

SAF2NAV RESULTS

Real world dead reckoning tests – UAV

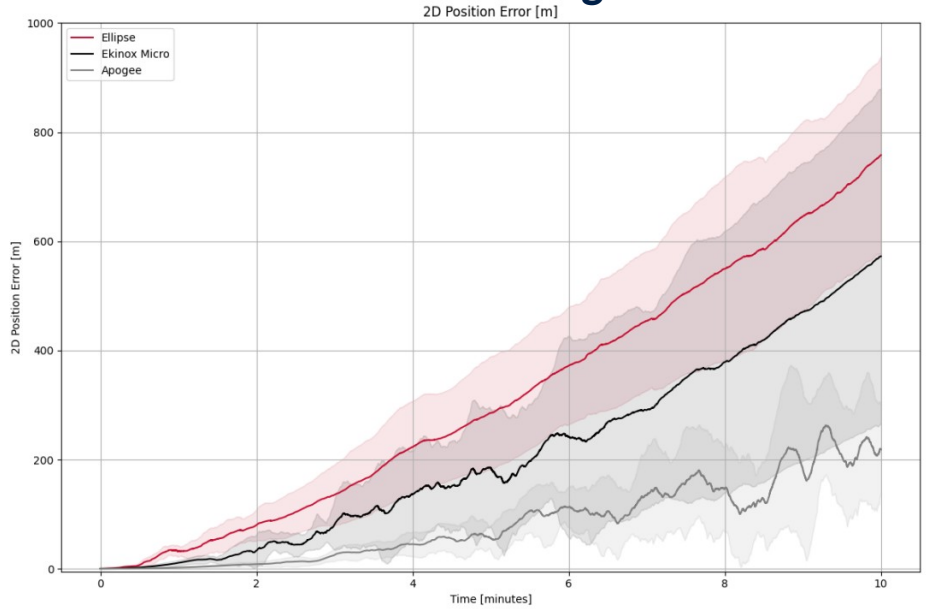
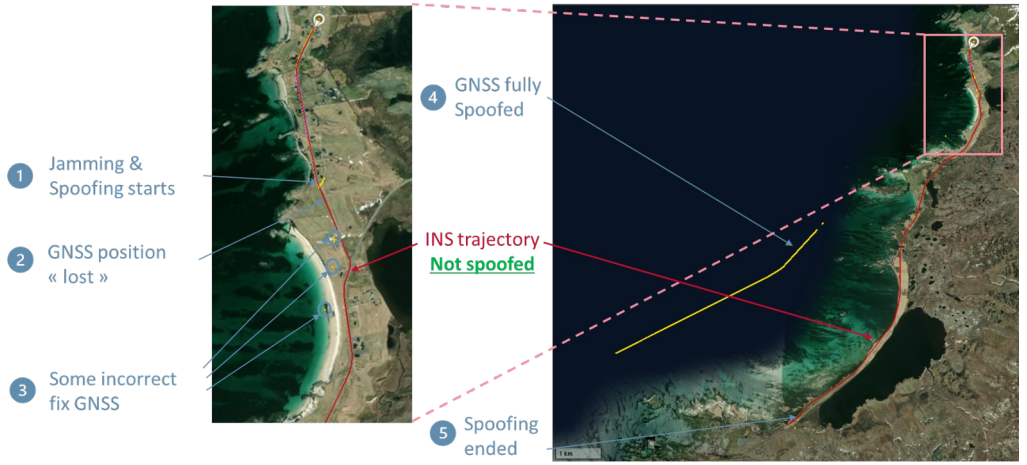
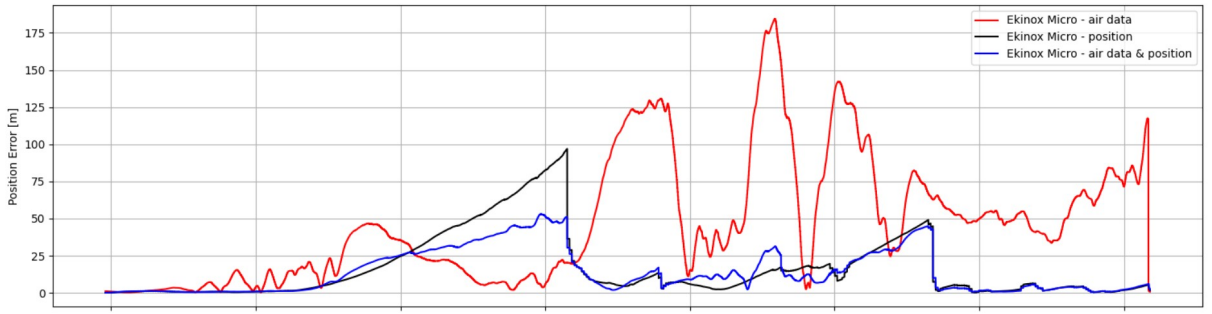


Figure 6: 2D position error - air data aided

Spoofing tests (jammertest) – Land



Test with visual navigation system – UAV



Pure MEMS INS → >100 m error after 10 min (@160km/h)

MEMS INS + Vision → < 50 m over 60 km (@800km/h)

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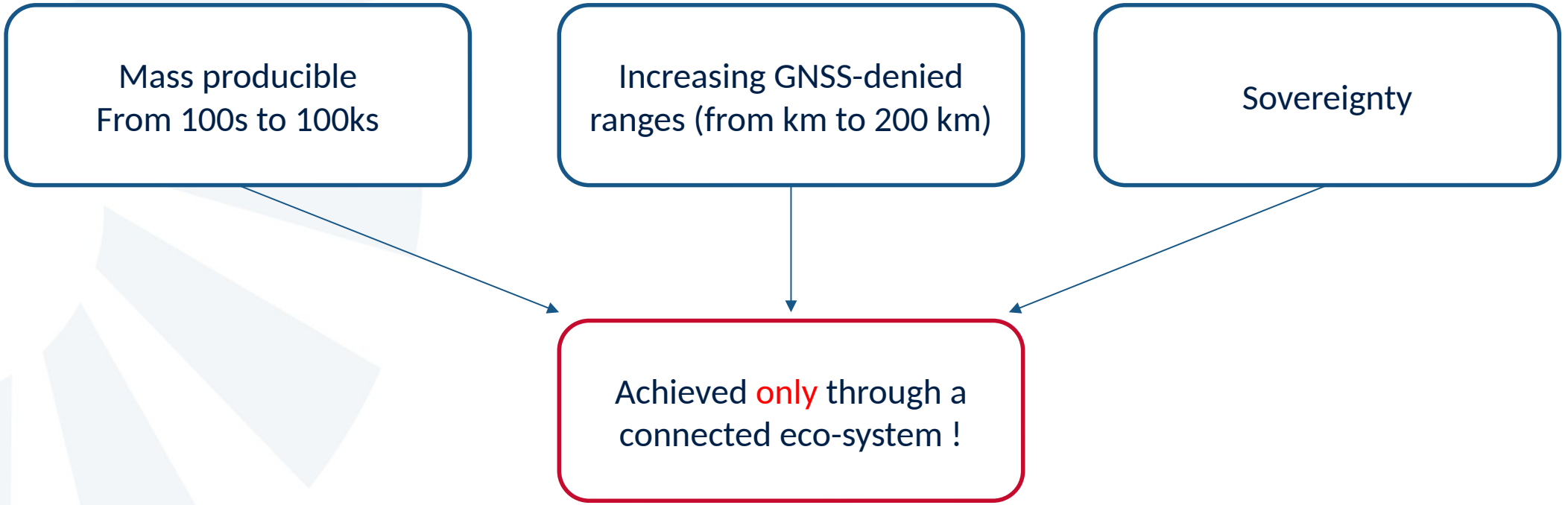
CHALLENGES

IT'S ALL ABOUT PARTNERSHIP AND JOINT DEVELOPMENT



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motion and navigation you can trust