

Drone Incident Management at Aerodromes Manual

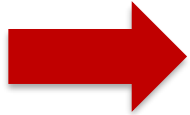
A safety promotion product of the European Union Aviation Safety Agency
(Aerodromes Standards & Implementation Section FS. 2.4)

Requests to obtain the full manual can be considered:

aerodromes@easa.europa.eu

Your safety is our mission.

Drone operations categories: the open category provides the potential for misuse of drones near/at aerodromes



OPEN – low risk

- Operations at maximum height <120m and max. 25kg and only in Visual Line of sight (VLOS) and inside UAS zones;
- No pre-approval but minimum training;
- 3 Sub-categories: fly over, close, far from people

Example:

- General public / recreational purpose
- Model Flying, Photographers



SPECIFIC - higher risk

- Operations in very low airspace.
- Authorization by Nat. Comp. Auth.
- Based on specific operation risk assessment (SORA);
- Declaration in case of standard scenario;
- Light UAS operator certificate.

Example:

- Below VLOS operations (linear inspections, aerial work, ...)
- Transport of goods.



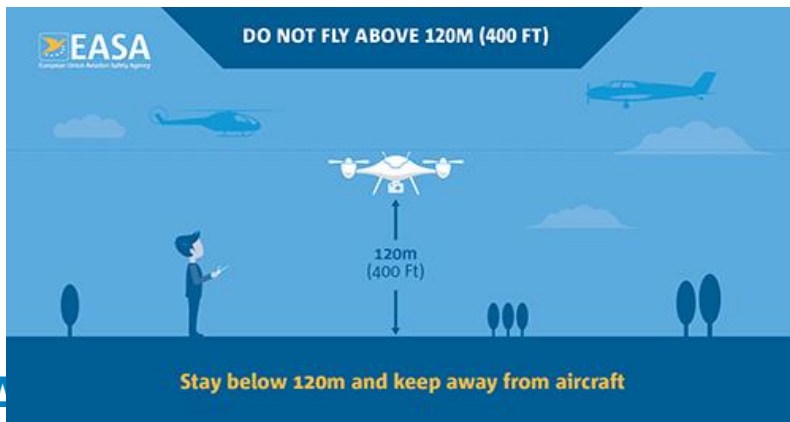
CERTIFIED - risk equal to manned aviation

- Operations in controlled airspace;
- Certification of UAS by EASA;
- Approval of the operator and licensed pilot by the NAAs, unless autonomous flight).

Example:

- Package delivery over people;
- Air Taxi;
- International IFR flights (cargo, passengers).

Restrictions on drone operations in the open category



Example: drone incident at Frankfurt Airport

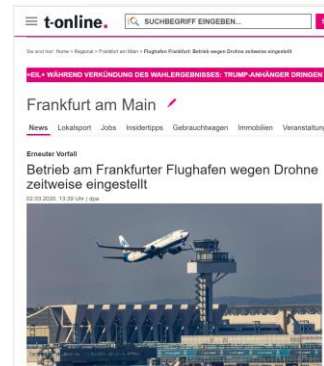
02.03.2020

Drone sightings

- 10:30 GMT
Arrival section between RWY 25L and 25C
 - 11:00 GMT
Close to RWY 25L
 - 11:13 GMT
Close to RWY 18
 - 11:28 GMT
Arrival section of RWY 25L
- **Effect:** Stop of operations 10:30-12:00 GMT

Drone sightings

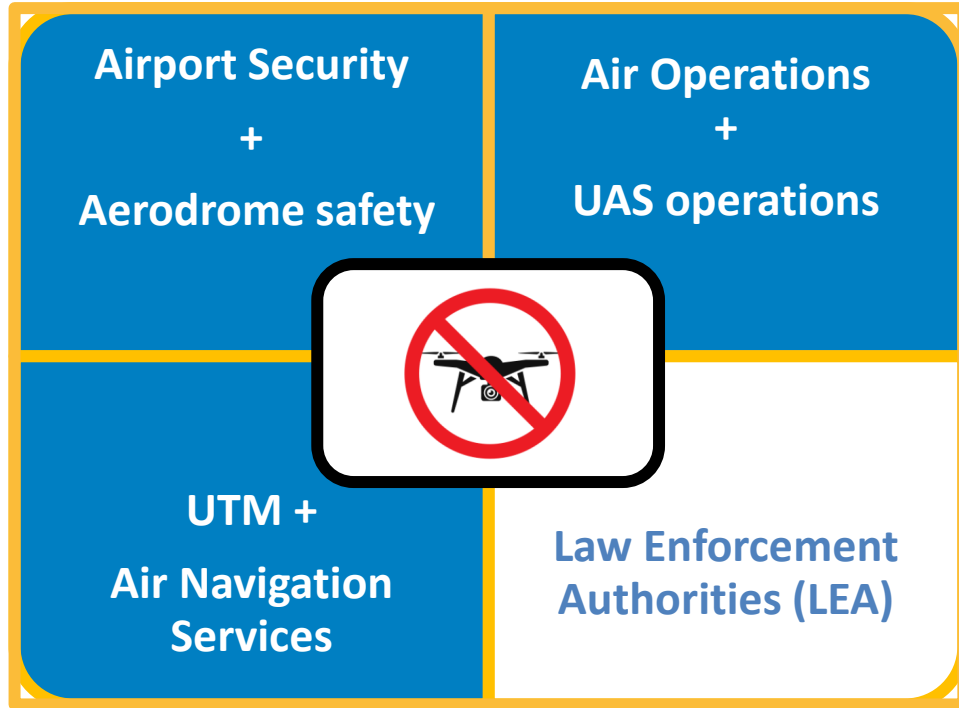
- 14:36 GMT
Arrival section RWY 07C
- **Effect:** Stop of departures 07 for 30 minutes



Impact on air traffic

- 57 re-routings
- 72 cancellations
- 9700 passengers affected by the cancellations

Regulatory context (unauthorised) drones:



The hybrid nature of the threat (safety and security), requires that the law enforcement perspective is considered and integrated into the management of drone incidents.

Publication on 8 March 2021



Home



The Agency



Newsroom & Events



Domains



Regulations



Document Library



Can We Help You?



08 Mar 2021 - Press Release

EASA issues guidelines for management of drone incidents at airports

“The root problem here is that these activities are unauthorised, and therefore by definition take place in ignorance or avoidance of the rules that have been defined for safe drone operations,” said EASA Executive Director Patrick Ky. “Our aim is to offer guidance and best practice advice to help aerodrome operators to prepare for such incidents and take the right steps when they occur, so as to minimise the extent of the disruption while ensuring that aviation operations remain safe.”

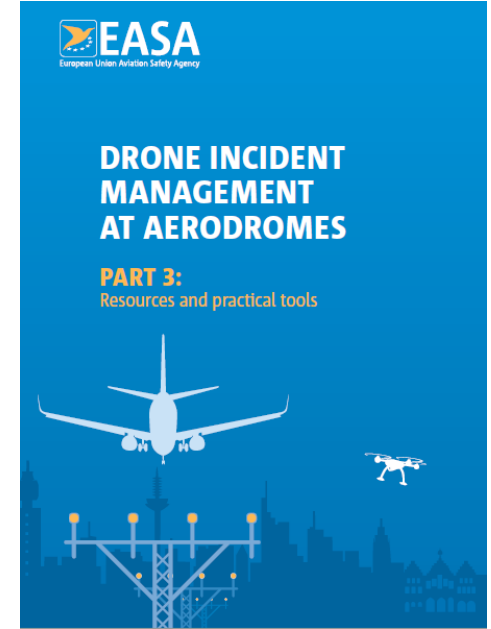
EASA provides first comprehensive document: Drone Incident Management at Aerodromes

Publicly available

Introductory



For Official Use Only - Need to know basis -
Guidance & Practical tools



Part 1: The challenge of unauthorised drones in the surroundings of aerodromes:

This public part covers the following:

- Introduction and context.
- The challenge posed to civil aviation by drones.
- EASA's Counter- UAS Action Plan
- Audience and scope of guidance & recommendations.
- Categories of drone incident offenders.
- Regulatory context.



DRONE INCIDENT MANAGEMENT AT AERODROMES

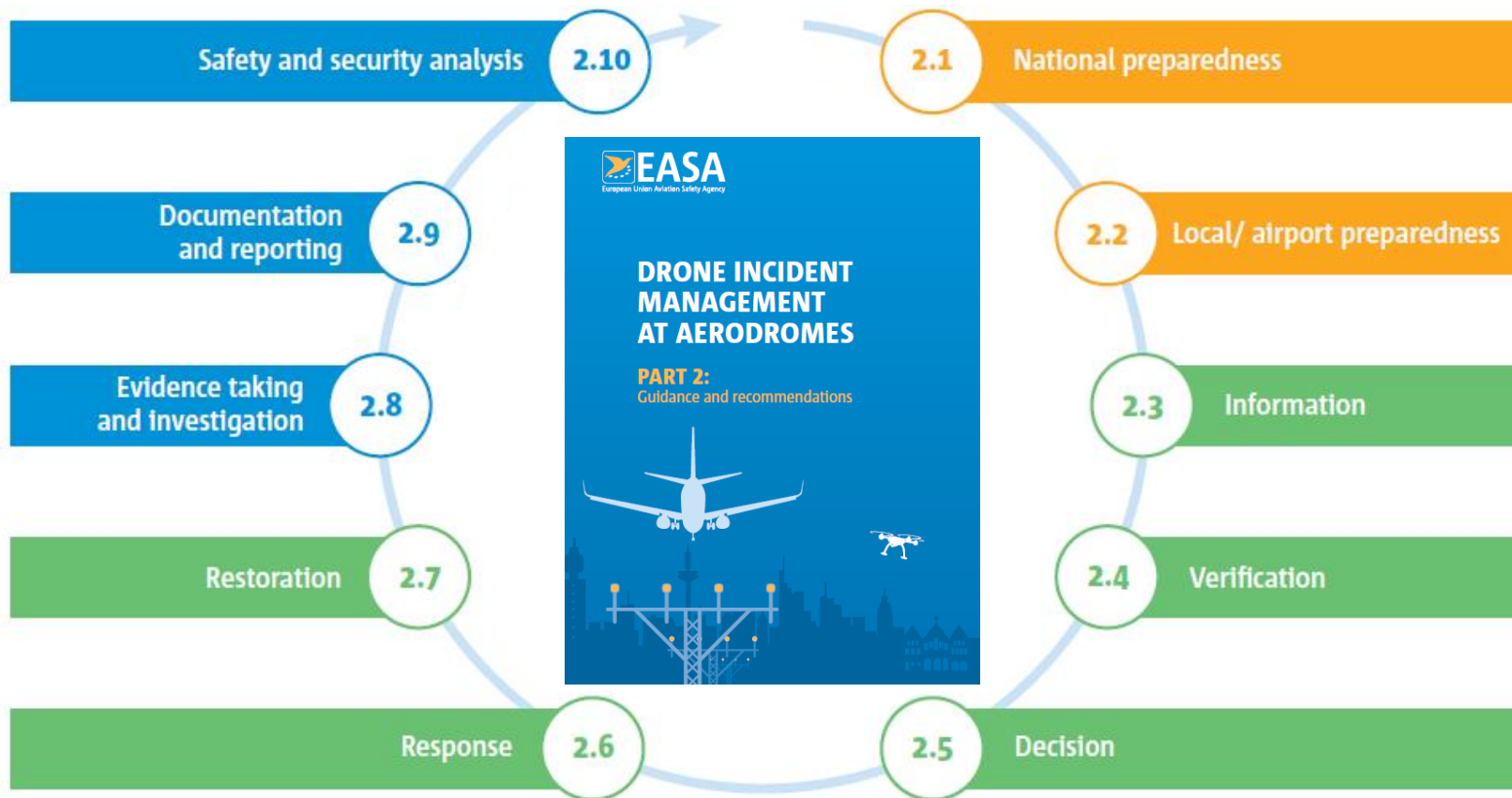
PART 1:
The challenge of unauthorised drones in the surroundings of aerodromes



Table 1: Categorisation of intention/ motivation of pilots of unauthorised drones³².

Negligence	<p><i>Clueless individuals</i>, who do not know or understand the applicable regulations and restrictions. As a result, they fly their drones in sensitive or prohibited areas. Their attitude can be described as “clueless” and they have no intent to disrupt civil aviation.</p> <p><i>Careless individuals</i>, who know the applicable regulations and restrictions, but breach them through either fault or negligence. As a result, they fly their drones in sensitive or prohibited areas. These individuals have no intent to disrupt civil aviation.</p>
Gross negligence	<p><i>Reckless individuals</i>, who do know the applicable regulations and restrictions, but deliberately do not follow the rules in order to pursue personal or professional gain (e.g. aggressive spotters). Their behaviour can be characterised as “reckless”, because they disrupt civil aviation by totally disregarding the consequences of their actions.</p> <p><i>Activists/ protesters</i> are individuals who, regardless of whether they know the applicable regulations and restrictions, actively seek to use drones to disrupt aerodromes and flight operations. To maximise impact, these individuals might even act as a group. While their acts can have unintended consequences for aviation safety, they have no intent to endanger human lives.</p>
Criminal/ terrorist motivation	<p><i>Criminals and terrorists</i> are individuals who, regardless of whether they know the applicable regulations and restrictions, actively seek to use drones to interfere with the safety and security of civil aviation. Because their acts are deliberate and show no regard for human lives and property, these individuals are to be regarded as being criminally motivated or even as terrorists³³.</p>

Part 2*: guidance for 10 phases for Before – During - After



Part 2*: guidance for 10 phases: Before – During - After



Prepare aerodromes to mitigate risks from unauthorised drones use.

- Risk assessment taking into account airport security aspects;
- Information gathering for a potential drone incident (including detection methods);
- Sharing of information and decision-making during incidents;
- Coordination of responses and learning from incidents; and
- Personnel training and public awareness campaigns.

Part 3* Overview of resources and tools (1/2)

DRONE INCIDENT MANAGEMENT AT AERODROMES

PART 3: Resources and practical tools



Annex 3.1 - Resources for the information phase.

Annex 3.2 - Drone Incident Management flow chart.

Annex 3.3 - Assessment of the consequences of collisions of manned aircraft with drones.

Annex 3.4 - Suggested Methodology for local risk assessment.

Annex 3.5 - Identification and verification, threat assessment forms.

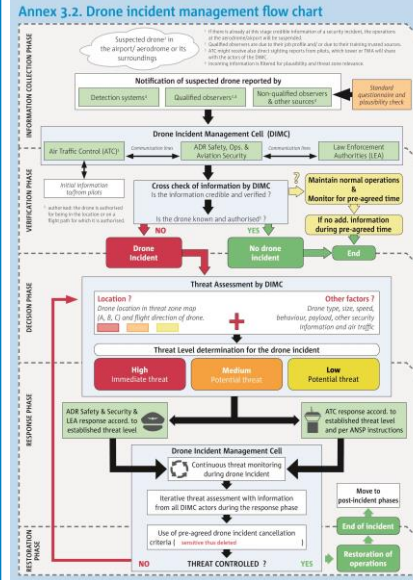
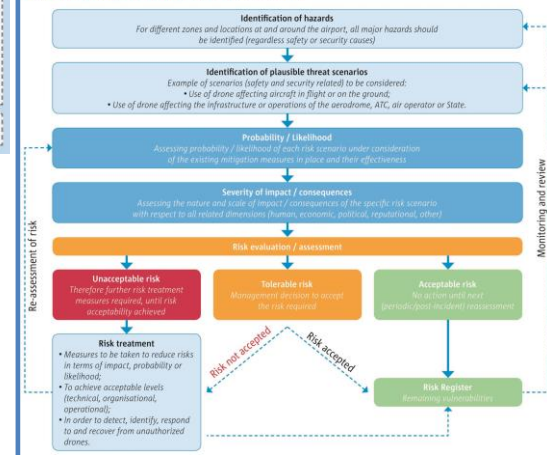


Figure A: Typical process Map for a risk assessment.



*sensitive material made available on a need to know basis for "Official use only"

Part 3* Overview of resources and tools (2/2)

DRONE INCIDENT MANAGEMENT AT AERODROMES

PART 3: Resources and practical tools



Annex 3.6 - Threat Zones and ATC response.

Annex 3.7a - Advice for procurement and testing of technological C-UAS solutions.

Annex 3.7b - Overview of technological C-UAS solutions.

Annex 3.8 - Guidance for the Initial response to a drone incident by first responders.

Annex 3.9 Tools for occurrence reporting and incident analysis

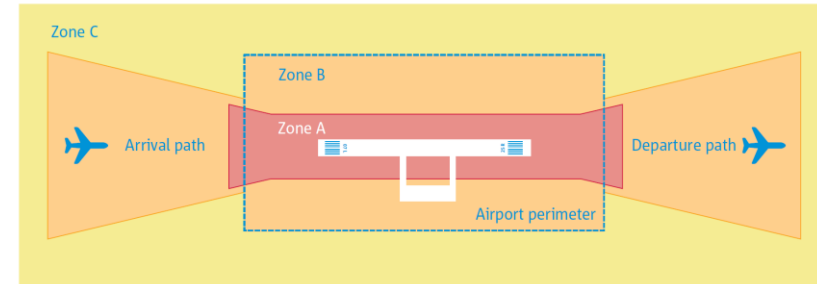
Threat zones - scope

Zone A (red)	Zone B (orange)	Zone C (yellow)
Runway/s, their immediate surroundings, arrival and departure sections.	Within airport perimeter and arrival and departure path/s affected.	Outside airport perimeter in the surroundings of the airport.

Zones A and B might be extended as considered necessary by the aerodrome operator and regulator. Any expansion of one of these zones will have an automatic impact on the size of the adjacent zone. Zone C is typically related to the boundary of the aerodrome's flight restriction zone (i.e. the UAS geographical zone). The areas of responsibility are:

- for the aerodrome operator (as a minimum) the area within the perimeter;
- for ATC TWR is inside the CTR zone;
- for the ATC Approach the area above or outside the CTR;
- for the police force/s will differ between the Member States,

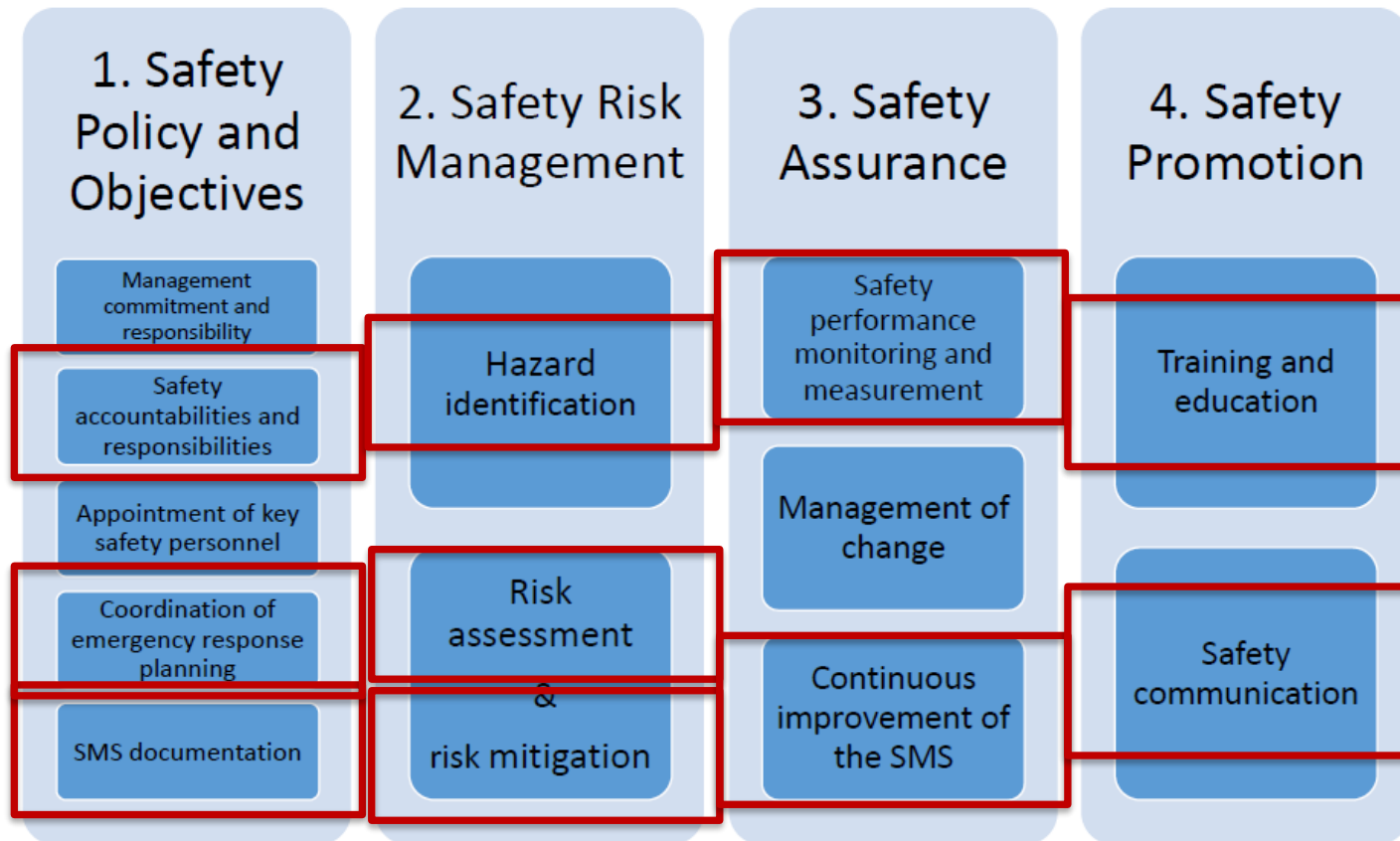
Threat zones - horizontal view



Zones A and B might be extended as considered necessary by the aerodrome operator and regulator. Any expansion of one of these zones will have an automatic impact on the size of the adjacent zone. Zone C is typically related to the boundary of the aerodrome's flight restriction zone (UAS geographical zone).

**sensitive material made available on a need to know basis for "Official use only"*

The Incident Management of the safety issue is described in terms of the SMS framework:



Interfaces of threat/ risk owners requires collaboration by all actors to protect the airport:

Depiction of the actors in the “Drone Incident Management Cell” (DIMC).

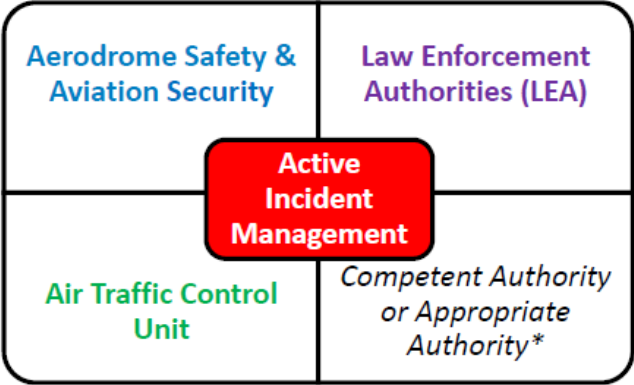
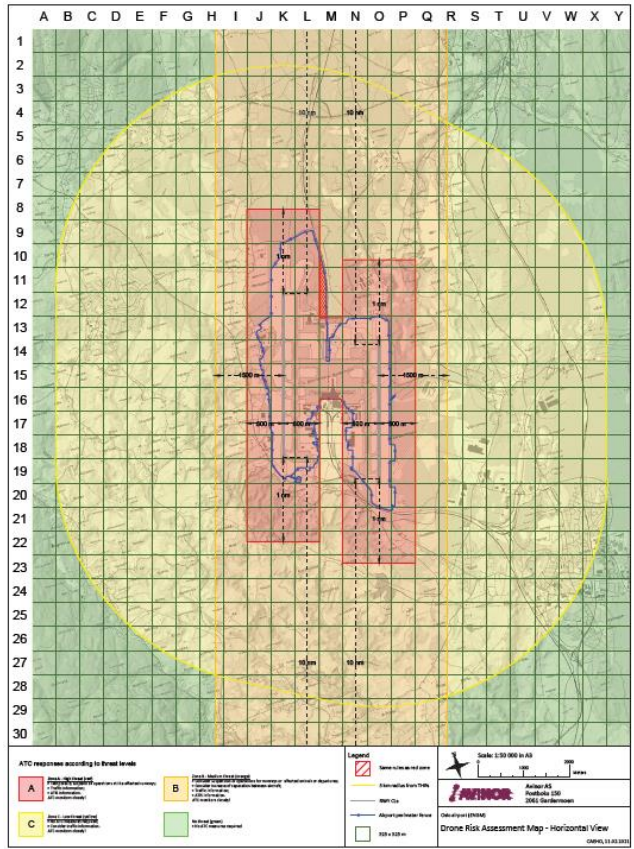


Figure D: draft of the horizontal threat map for Oslo Gardermoen airport using the definitions of the threat zones recommended in annex 3,6 Threat zones and ATC response.



Thank you !

aerodromes@easa.europa.eu

easa.europa.eu/connect



Your safety is our mission.

An Agency of the European Union 