REPUBLIC OF ALBANIA

AUTORITETI I AVIACIONIT CIVIL

ALBANIAN CIVIL AVIATION AUTHORITY

AERODROME PROTECTED AREAS - SAFEGUARDING GUIDANCE MATERIAL

ACAA-DAD-GM1-APAS (Issue 02, Rev. 00)

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Approved by:

REPUBLIKA E SHQIPERISE - MINISTRIA E INFRASTRUKTURËS DHE ENERGJISË - AUTORITETI I AVIACIONIT CIVIL - TIRANË

Maksim Et'hemaj

Executive Director of Albanian Civil Aviation Authority

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0. ADMINISTRATION

0.1 Record of Amendments

The table below describes the dates and reason for the different amendments of the current procedure.

A vertical black line on the left-hand side of the page identify the changes with the previous version.

Issue No.	Revision No.	Date	Amended by	Reason
01	00	29.07.2020		Initial Issue
02	00	05.07.2023		Major Amendments

0.2 Approval List

Action	Name and position	Date	Signature
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0.3 Revision table

Page #	Issue No.	Revision No.	Date	Edited by
All	02	00	05/07/2023	DAD

0.4 Distribution List

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0.5 Definitions & Acronyms

Term	Definition
Aerodrome	A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.
Aerodrome Certificate	A certificate issued by the appropriate authority under applicable regulations for the operation of an aerodrome.
Aeronautical Study	A study of an aeronautical problem to identify possible solutions and select a solution that is acceptable without degrading safety.
Aerodrome Elevation	The elevation of the highest point of the landing area.
Aerodrome Reference Point	The designated geographic location of an aerodrome.
Balked landing	A landing manoeuvre that is unexpectedly discontinues at any point below the obstacle clearance altitude/height (OCA/H).
Certified Aerodrome	An aerodrome, whose operator has been issued an aerodrome certificate.
Clearway	A defined rectangular area on the ground or water under the control of the appropriate authority, selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to a specific height.
Construction	The erection, installation, replacement, repair, extension, modification or conversion of a building structure, excluding maintenance works of existing buildings.
Developer	Any legal or physical person who has shown interest in building or has applied for a building permit.
Displaced threshold	A threshold not located at the extremity of a runway.

Electronic equipment	Non-visual or instrumental equipment used at the aerodrome for air navigation.
En-route obstacle	Object outside the OLS and aerodrome protected areas, that have a height of 150 m (above ground level) and above having a significant importance to the aircraft operations en-route.
Frangible object	An object of law mass designs to break, distort or yield on impact so as to present the minimum hazard to aircraft.
Instrument runway	One of the following types of runways intended for the operation of aircraft using instrument approach procedures.
Non-precision approach runway	A runway served by visual aids and a non-visual aid(S) intended for landing operations following an instrument approach operation type A and a visibility not less than 1000 m.
Precision approach runway, category I	A runway served by visual aids and non-visual aid(s) intended for operations following an instrument approach operation type B with a decision height (DH) not lower than 60 m (200 ft.) and either a visibility not less than 800 m or a runway visual range not less than 550 m.
Precision approach runway, category II	A runway served by visual aids and non-visual aid(s) intended for landing operations following and instrument approach type B with a decision height (DH) lower than 60 m (200 ft.) but not lower than 30 m (100 ft.) and a runway visual range not less than 300 m.
Precision approach runway, category III	- A runway served by visual aids and non-visual aid(s) intended for landing operations following and instrument approach type B and along the surface of the runway and: a) Intended for operations with a decision height (DH) lower than 30 m (100 ft.), or no decision height and a runway visual range not less than 175 m. b) Intended for operations with a decision height (DH) lower than 15 m (50 ft.), or no decision height and a runway visual range less than 175 m but not less than 50m c) Intended for operations with no decision height (DH) and no runway visual range limitations.

Instrument flight paths or IFR flights	Flights guided by instrument flight rules.
TORA	Take-off run available (TORA). The length of runway declared available and suitable for the ground run of an aeroplane taking off.
TODA	Take-off distance available (TODA). The length of the take-off run available plus the length of the clearway, if provided.
ASDA	Accelerate-stop distance available (ASDA). The length of the take-off run available plus the length of the stopway, if provided.
LDA	Landing distance available (LDA). The length of runway which is declared available and suitable for the ground run of an aeroplane landing.
Obstacle	All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that: a) are located on an area intended for the surface movement of aircraft; or b) extend above a defined surface intended to protect aircraft in flight; or c) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.
Obstacle Limited Surfaces (OLS)	A series of plans/surfaces associated with each runway at an aerodrome that define the anticipated limits within which objects may be projected into the airspace around the aerodrome for aircraft operations at the aerodrome to be conducted at safe way.
Obstacle Free Zone (OFZ)	The airspace above the inner approach surface, inner transitional surfaces, and balked landing surface and that portion of the strip bounded by these surfaces, which is not penetrated by any fixed obstacle other than a low-mass and frangible mounted one required for air navigation purposes.

Obstacle Protection Surface	Means a surface designed for the visual approach slope indicator system on which objects or extensions of existing objects are not permitted, unless, in the judgment of the appropriate authority, the new object or extension will be protected by a existing stationary object.
Safety Assessment	An element of the risk management process of a SMS that is used to assess safety concerns arising from, inter alia, deviations from standards and applicable regulations, identified changes at an aerodrome or when any other safety concerns arise.
Radar	Means a radio detecting device which provides information on the bearing, azimuth and/or altitude of objects.
Runway	A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.
Runway End Safety Area (RESA)	An area symmetrical about the extended runway centre line and adjacent to the end of the strip primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning the runway.
Runway strip	A defined area including the runway and stop way, if provided, intended: - To reduce the risk of damage to aircraft running off a runway; and - To protect aircraft flying over it during take-off or landing operations.
Take-off runway	A runway intended for take-off only.
Threshold	The beginning of that part of the runway usable for landing.

0.6 Abbreviations and Acronyms

Abbreviation or Acronym	Meaning
ACAA	Albanian Civil Aviation Authority
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Service
ATC	Air Traffic Control
AGL	Above Ground Level
AMSL	Above Mean Sea Level
AO	Aerodrome Operator
BRA	Building Restricted Area
CNS	Communication, Navigation and Surveillance
EASA	European Union Aviation Safety Agency
ICAO	International Civil Aviation Organization
ILS	Instrumental Landing System
IFR	Instrument Flight Rules
IHS	Inner Horizontal Surface
IFP	Instrument Flight Procedure
LPA	Local Planning Authority
OLS	Obstacle Limitation Surface
OFZ	Obstacle Free Zone
OHS	Outer Horizontal Surface
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
SMS	Safety Management System
SOP	Standard Operating Procedure
MO	Minister's Order
RESA	Runway End Safety Area
TOCS	Take-off Climb Surface
VAC	Visual Approach Chart
VSS	Visual Segment Surface
VFR	Visual Flight Rules

1. INTRODUCTION

1.1 Objective

The objective of this guidance material is to provide instructions to enable those responsible for the safe operation of aerodrome to assess the impact of proposed developments or construction on such operations inside and outside OLS. The aim of this guidance material is to provide guidance to aerodrome operators with the requirements for control of obstacles at and in the vicinity of the aerodrome to minimize the hazard to aircraft operations created by the presence of natural or man-made obstacles.

1.2 Regulatory Framework

- Law No. 96/2020 “Air Code of the Republic of Albania”;
- Law No. 53/2022 “For the organisation and administration of the Civil Aviation Authority”;
- The Council of Ministers Decision No. 729, dated 16.11.2022 “For the procedures and rules of equipment with aviation obstacle marking”;
- Minister’s Order No. 130/2012 “Regulation for certification, registration of aerodromes and operation obligations and responsibilities falling on aerodrome operators, transposing Annex 14”;
- Minister’s Order No. 170/2022 “Regulation for determining the requirements and administrative procedures related to the aerodromes in the Republic of Albania”;
- ICAO Doc 9137 – AN/898, Airport Services Manual, Part 6 “Control of obstacles”;
- Annex 14, Volume 1 – Aerodromes Design and Operations;
- Best practices from other countries such as UK, USA, Nepal etc.

Law No. 96/2020 "Air Code of the Republic of Albania", Article 60 “Aerodrome Protected Areas and Construction Restrictions”, defines the provisions as follows:

1. Designation of aerodrome protected areas, terms and conditions of developments and construction in these areas and in the vicinity of these areas are conducted according to the legislation in force regarding planning and development of the territory.
2. No construction permit, within the aerodrome protected area, is granted without the approval of CAA, and after taking into account the official opinion of the aerodrome operator.
3. The construction permits outside the aerodrome protected areas is granted by the consent of ACAA, in cases when the construction height exceeds 100 meters above the ground surface. ACAA may impose restrictions on installations higher than 30 meters, which are placed on natural or artificial heights, in cases where the highest point of these installations exceeds the highest height, in a radius of 1.5 kilometres around installation, with more than 100 meters.

Also Article 61, Article 62, Article 63 as well as 64 of Law No. 96/2020 "Air Code of the Republic of Albania" present provisions applicable to aerodrome protected areas.

Minister's Order No. 170/2022 "Regulation for determining the requirements and administrative procedures related to the aerodromes in the Republic of Albania", Article 8 "Protection of the aerodrome surroundings", defines the requirements as follows:

1. The Civil Aviation Authority shall ensure that consultations are carried out regarding the impacts on operational safety of construction proposed to take place within the limits of the OLS and protective surfaces, as well as other surfaces connected to the aerodrome.
2. The Civil Aviation Authority shall ensure that consultations are carried out regarding the impacts on the technical safety of constructions proposed to be built beyond the limits of OLS and protective surfaces, as well as other surfaces related to the aerodrome and which exceed the height determined by the Civil Aviation Authority.
3. The Civil Aviation Authority will ensure coordination for the safeguarding of aerodromes located near the national borders with other member states of the ECAA-European Common Aviation Area (according to the provisions of the multilateral agreement).

Also, Article 9 "Monitoring of the aerodrome surroundings", presents the requirements, as follows:
The Civil Aviation Authority will ensure that consultations are held in relation to the human activities and land use, such as:

a) any development or change in land use in the aerodrome area;
b) any development that may create obstacles caused by turbulence that may be hazardous to aircraft operations;
c) use of dangerous, confusing and disorienting lights;
d) use of highly reflective surfaces which can cause glare;
e) creation of areas that may promote the activity of wild animals, dangerous for operations of aircrafts;
f) sources of invisible radiation or the presence of mobile or stationary objects, which may interfere with or adversely affect the performance of aeronautical communication, navigation and surveillance systems.

Other requirements related to the aerodrome protected areas in Regulation 170/2022 are contained in ADR.OPS. B.075 "Protection of aerodromes", AMC and relevant GM".

Minister's Order No. 130/2012 "Regulation for certification, registration of aerodromes and operation obligations and responsibilities falling on aerodrome operators, transposing Annex 14", Chapter 6 "Obstacles and hazards", presents requirements for the aerodrome operators related to airspace monitoring around of the aerodrome, the creation of OLS, the notification of obstacles as well as the responsibilities of ACAA related to hazardous objects inside and near the aerodrome.

ICAO Annex 14, Volume 1 requires that Contracting States define the airspace around aerodromes to be maintained free from obstacles so as to permit the intended aeroplane operations at the aerodromes to be conducted safely and to prevent the aerodromes from becoming unusable by the growth of obstacles around the aerodromes. This is achieved by establishing a series of obstacle limitation surfaces that define the limits to which objects may project into the airspace.
Object which penetrate the obstacle limitation surfaces may in certain circumstances cause an increase in the obstacle clearance altitude/height for an instrument approach procedure or any associated visual circling procedure or have other operational impact on flight procedure design. Criteria for flight procedure design are contained in the Procedures for Air Navigation Services — Aircraft Operations (PANS-OPS, Doc 8168).

This guidance material for aerodrome protected areas describes the aerodrome safeguarding process. ACAA, the operator of the certified aerodrome, as well as the institutions which according to Law No. 107, dated 01.09.2014 "On planning and development of the territory", as amended, are responsible for granting consents for the types of construction defined in this law and the regulations issued in its implementation, which fall within the scope of this guidance material, will respect the instructions of this guidance material, while exercising their status functions in a coordinated manner regarding the developments and constructions in the designated areas near the airports.

1.3 Requirements

An aerodrome operator is required to monitor the airspace around the aerodrome for infringement of the obstacle limitation surfaces by any object, building or structure. The aerodrome operator must take all reasonable measures to ensure that obstacles at or within the vicinity of the aerodrome are detected as quickly as possible. The aerodrome operator is required to inform ACAA and ATS immediately after he becomes aware of the presence of an obstacle, giving details of its height and location and amended declared distances and gradients where applicable. In addition, where the aerodrome operator becomes aware of any development or proposed construction near the aerodrome that is likely to create an obstacle, he must inform ACAA and ATS as soon as practicable, giving all details of the likely obstacle.

The method of assessing the significance of any existing or proposed object within the aerodrome boundary or in the vicinity of the aerodrome is to establish defined obstacle limitation surfaces particular to the runway and its intended use. Obstacles which penetrate the obstacle limitation surfaces may in certain circumstances cause an increase in the obstacle clearance altitude or obstacle clearance height for an instrument approach procedure or any associated visual circling procedure. In ideal circumstances, all the surfaces will be free from obstacles, but when a surface is infringed, any safety measures required by the ACAA will give consideration to the following:

a) The nature of the obstacle and its location relative to the surface origin, to the extended centreline of the runway or normal approach and departure paths and to existing obstructions;
b) The amount by which the surface is infringed;
c) The gradient presented by the obstacle to the surface origin;
d) The type of air traffic at the aerodrome; and
e) The instrument approach procedures published for the aerodrome.

Safety measures could be as follows:

a) Promulgation in the AIP of appropriate information;
b) Marking and/or lighting of the obstacle;
c) Variation of the runway distances declared as available;
d) Limitation of the use of the runway to visual approaches only; and
e) Restrictions on the type of aircraft traffic.

Note: Safety Assessment Flowchart if further described at Appendix 2 of this guidance material.

Particular attention should also be given to the security of the movement area and access denied to unauthorized persons and/or vehicles.

1.4 Responsibility

Ultimate responsibility for restriction and control of obstacles within the boundaries of OLS, must in practice, rest with the aerodrome operator. This includes the responsibility for controlling obstacles on aerodrome property and for arranging the removal or lowering of existing obstacles outside the aerodrome boundaries. Outside the boundaries of the OLS, the responsibility rests with the developer/object owner and ACAA.

2. OBSTACLE LIMITATION SURFACES EXPLAINED

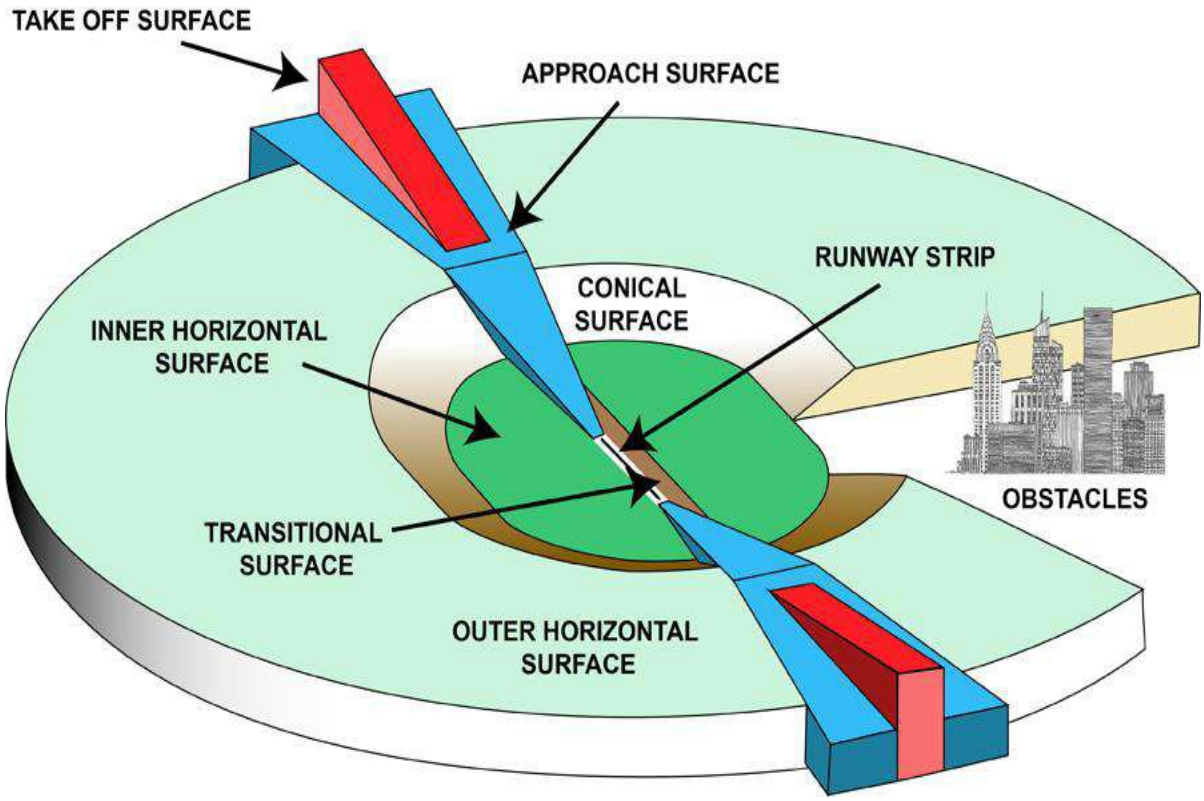

Figure 1. Obstacle Limitation Surfaces

In order to protect aircraft against potential collision risk, it is necessary to implement rules regarding tall structures surrounding aerodromes. This is done via the implementation and safeguarding of Obstacle Limitation Surfaces or Protected Aerodrome Areas as detailed in this guidance material and also Annex 14, Vol 1 of ICAO or Easy Access Rules for Aerodromes of EASA.

The Obstacle Limitation Surfaces (OLS) are conceptual (imaginary) surfaces associated with a runway, which identify the lower limits of the aerodrome airspace above which objects become obstacles to aircraft operations, and must be reported to ACAA.

Note: The term OLS is used to refer to each of the imaginary surfaces which together define the lower boundary of aerodrome airspace, as well as to refer to the complex imaginary surface formed by combining all the individual surfaces.

2.1 Transitional Surface

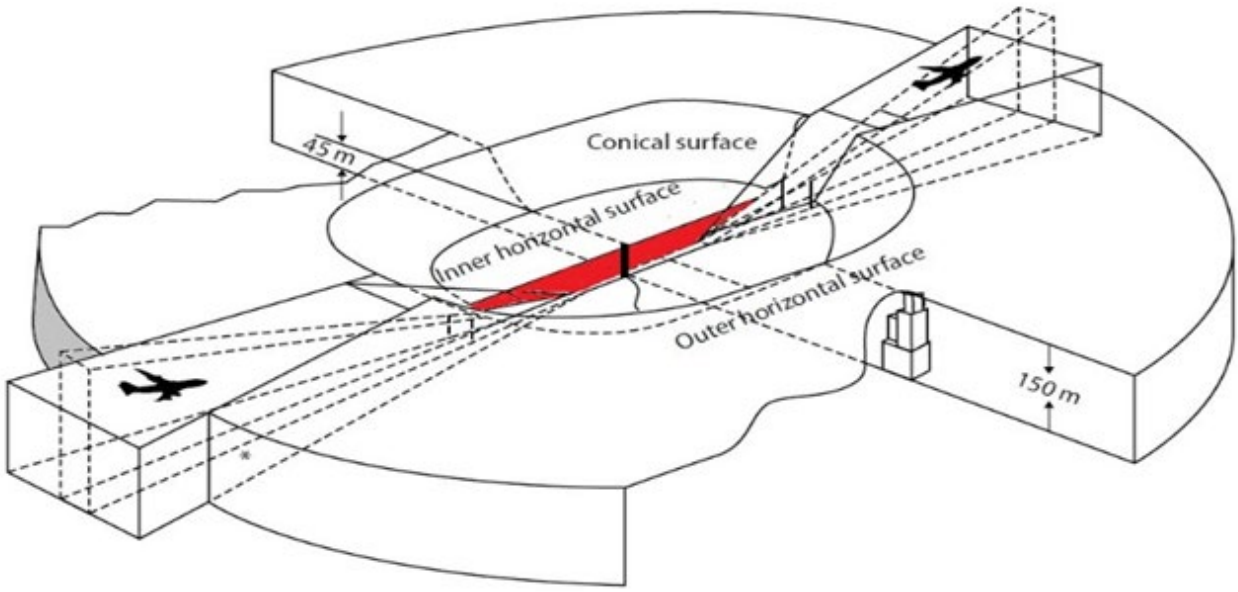

Figure 2. Transitional Surface

Applicability: The purpose of the transitional surface is to define the limit of the area available for buildings, other structures or natural obstructions, such as trees.

1. The transitional surface is a complex surface along the side of the strip and part of the side of the approach surface that slopes upwards and outwards to the Inner Horizontal Surface (IHS).
2. Transitional surfaces are established for every runway intended to be used for landing.
3. The slope of the transitional surface is measured in the vertical plane above the horizontal, and normal to the centreline of each runway. The slope is 20% (1:5) for Code 1 and 2 non-instrument and non-precision instrument runways; for all other runways the slope is 14.3% (1:7).
4. The limits of a transitional surface should comprise:
   a) A lower edge beginning at the intersection of the side of the approach surface with the IHS and extending down the side of the approach surface to the inner edge of the approach surface and from there along the length of the strip parallel to the runway centre line; and
   b) An upper edge located in the plane of the IHS.
5. The elevation of a point on the lower edge should be:
   a) Along the side of the approach surface — equal to the elevation of the approach surface at that point; and
   b) Along the strip — equal to the elevation of the nearest point on the centre line of the runway or its extension.
6. The outer limit of a transitional surface is determined by its intersection with the plane of the IHS.
7. The slope of the transitional surface should be measured in a vertical plane at right

angles to the centre line of the runway.

2.2 Inner Horizontal Surface

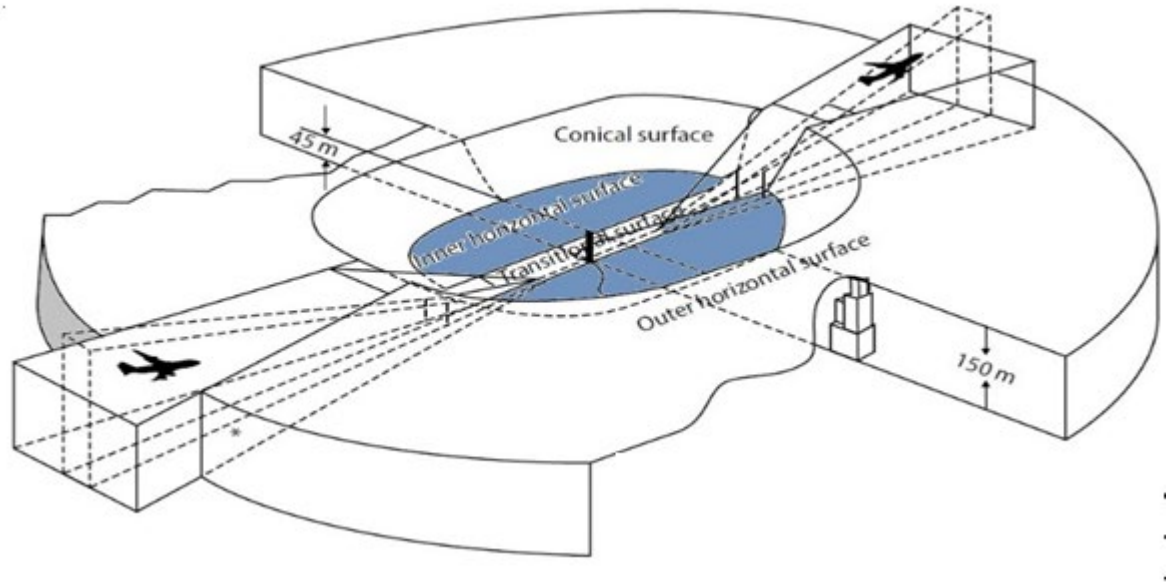

Figure 3. Inner Horizontal Surface

Applicability: The purpose of the inner horizontal surface is to protect airspace for visual manoeuvring prior to landing.

1. The IHS is a surface located in a horizontal plane above an aerodrome and its environs and is established for every aerodrome.
2. The outer limits of the IHS are defined by circular arcs centred on the geometric centre of the runway, on the intersection of the extended runway centre line with the end of the runway strip joined tangentially by straight lines or points established for such purpose
3. Inner horizontal surface - elevation datum. To satisfy the intention of the inner horizontal surface described above, it is desirable that authorities select a datum elevation from which the top elevation of the surface is determined. Selection of the datum should take account of:
   a) the elevations of the most frequently used altimeter setting datum points;
   b) minimum circling altitudes in use or required; and
   c) the nature of operations at the airport.

For relatively level runways the choice of datum is not critical, but when the thresholds differ by more than 6 m, the datum selected should have particular-regard to the factors above. A common elevation is not essential, but where surfaces overlap the lower surface should be regarded as dominant.

4. The limits of the IHS are established as follows:
5. Where the main runway is 1800 m or more in length, circles of radius 4000 m are described centred on the strip ends of the runway. These circles are joined by common

tangents parallel to the runway centreline to form a racetrack pattern. The boundary of this pattern is the boundary of the IHS.

6. Where a main runway is less than 1800 m in length, the IHS is circular and is centred on the mid-point of the runway. The radius is 4000 m except in the case of non-instrument runways where the code number is 1 or 2. For these runways the radii are 2000 m and 2500 m respectively.
7. Where the IHS is at any point lower than an approach surface or take-off climb surface, the IHS is the obstacle limitation surface at that point.

2.3 Conical Surface

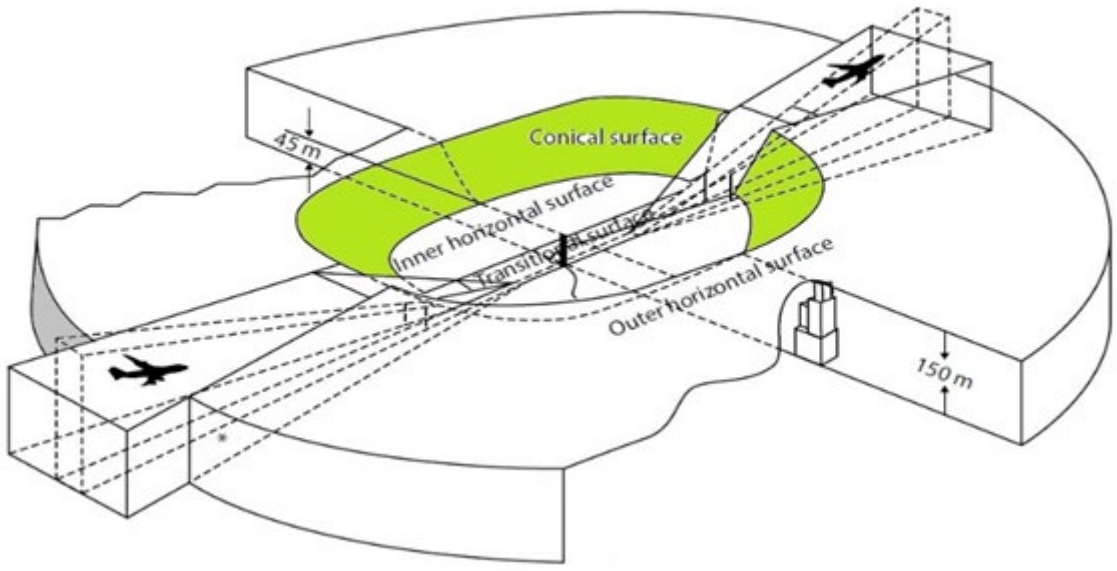

Figure 4. Conical Surface

Applicability: The purpose of the conical surface is to facilitate safe visual manoeuvring in the vicinity of the aerodrome.

1. A surface sloping upwards and outwards from the periphery of the IHS. It represents the level above which consideration needs to be given to the control of new obstacles to ensure safe visual manoeuvring in the vicinity of an aerodrome.
2. A conical surface is established for every aerodrome.
3. The limits of the conical surface should comprise:
    a. A lower edge coincident with the periphery of the IHS; and
    b. an upper edge contained in a horizontal plane located 100 m above the IHS except:
        i. where the code number of a non-precision instrument runway is 3, 2 or 1; in these cases, the plane is located 75 m above the IHS where the code number is 3 and 60 m where the code number is 2 or 1.

ii. where the code number of a non-instrument runway is 3, 2 or 1; in these cases, the plane is located 75 m above the IHS where the code number is 3, 55 m where the code number is 2 and 35 m where the code number is 1.

4. The slope of the conical surface should be measured in a vertical plane perpendicular to the periphery of the IHS, at 5 % (1:20).

2.4 Outer Horizontal Surface

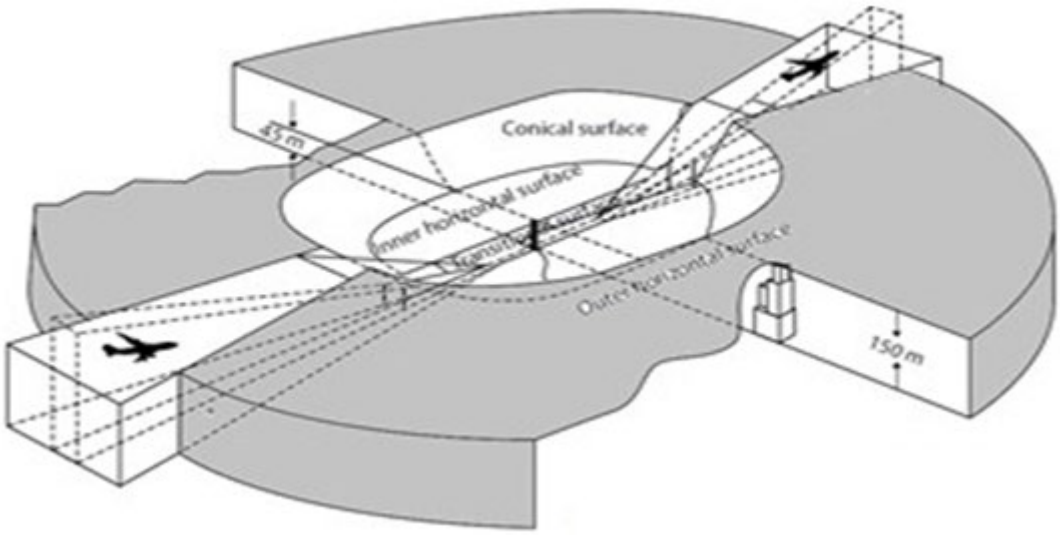

Figure 5. Outer Horizontal Surface

Applicability: As a broad specification for the outer horizontal surface, tall structures can be considered to be of possible significance if they are both higher than 30 m above local ground level, and higher than 150 m above aerodrome elevation within a radius of 15000 m of the centre of the airport where the runway code number is 3 or 4. The area of concern may need to be extended to coincide with. the obstacle-accountable areas of PANS- OPS for the individual approach procedures at the airport under consideration.

1. An OHS is a specified portion of a horizontal plane around an aerodrome beyond the limits of the conical surface. It represents the level above which consideration needs to be given to the control of new obstacles in order to facilitate practicable and efficient instrument approach procedures, and together with the conical and IHS to ensure safe visual manoeuvring in the vicinity of an aerodrome. The inner edge of the OHS is located directly above the outer edge of the conical surface.
2. An OHS may be established for any aerodrome where the main runway is 1100 m or more in length.
3. The OHS extends from the periphery of the conical surface to a minimum radius of 15000 m from the aerodrome reference point where the runway code number is 3 or 4

and to a minimum radius of 10000 m where the main runway is 1100 m or more but less than 1200 m in length.

2.5 Approach Surface

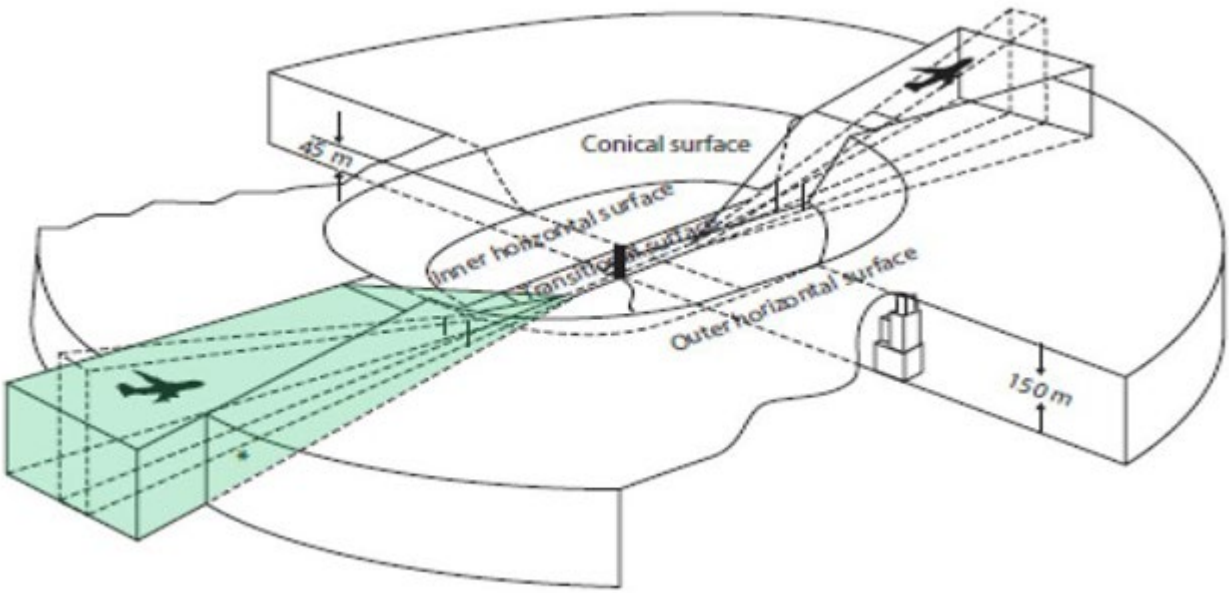

Figure 6. Approach Surface

Applicability: An approach surface is an inclined plane or combination of planes preceding the threshold and is established for each runway direction intended to be used for the landing of aircraft.

1. The limits of the approach surface comprise: a horizontal inner edge of specified length perpendicular to the centreline of the runway located at a distance of 60 m before the landing threshold, except in the case of non-instrument runways where the code number is 1 and where the distance is 30 m;
    a. two sides originating at the ends of the inner edge and diverging uniformly at a specified rate from a line drawn parallel to the extended centreline of the runway;
    b. an outer edge parallel to the inner edge.
2. The elevation of the inner edge is equal to the elevation of the mid-point of the landing threshold.
3. The slope of the approach surface is measured in the vertical plane containing the centreline of the runway. An approach surface for an instrument runway is horizontal beyond the point at which it intersects a horizontal plane 150 m above the threshold elevation.
4. Table 2. “Approach surface slopes and dimensions” describes the characteristics of approach runways for all aerodrome (runway) references codes

2.6 Take-off Climb Surface

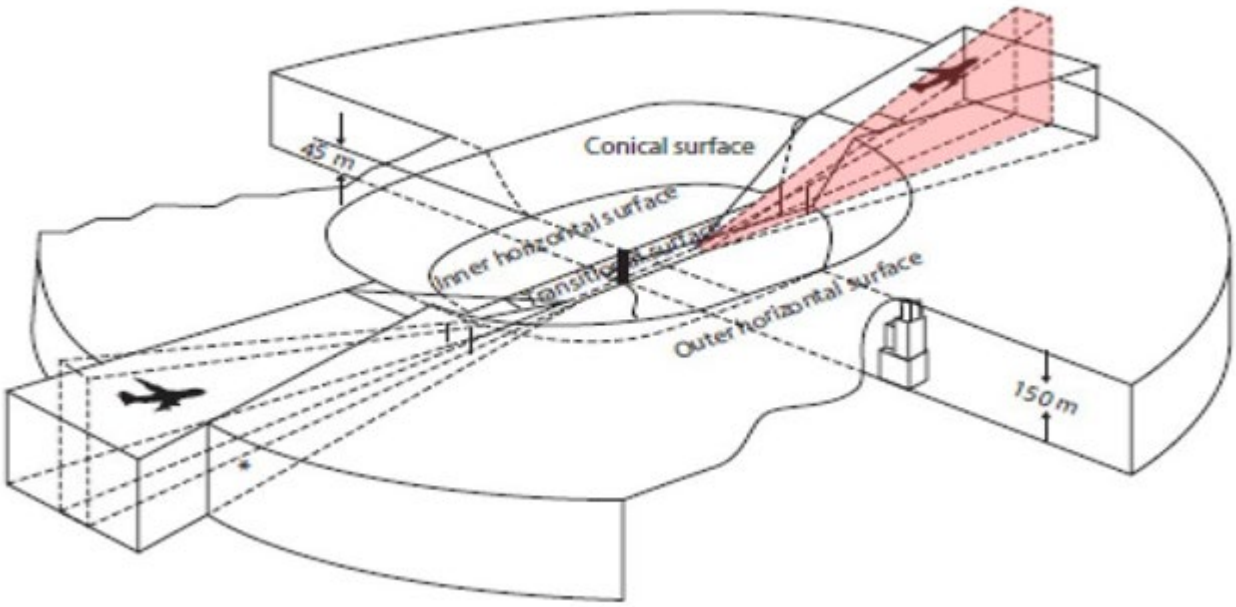

Figure 7. Take-off Climb Surface

Applicability: A take-off climb surface is an inclined plane located beyond the end of the take-off run available or the end of the clearway where one is provided and is established for each runway direction intended to be used for take-off.

1. The limits of a take-off climb surface comprise:
    a. an inner edge of specified length, perpendicular to the extended centreline of the runway, at the end of the clearway, when such is provided, but in no case less than:
        i. a distance of 60 m measured horizontally in the direction of take-off beyond the end of the declared take-off run available, where the code number is 2, 3 or 4; or
        ii. a distance of 30 m measured horizontally in the direction of take-off beyond the end of the declared take-off run available where the code number is 1.
    b. two sides originating at the ends of the inner edge, diverging uniformly at a specified rate from the vertical projection of the take-off flight path to a specified final width and continuing thereafter at that width for the remainder (if any) of the length of the take-off climb area;
    c. an outer edge parallel to the inner edge.
2. The elevation of the inner edge is equal to that of the end of the clearway, or clearway

plane, on the extended centreline of the runway. Where a clearway is not provided, the elevation is that of the point of intersection of the centreline of the runway and the inner edge.

3. In the case of a straight take-off flight path, the slope of the take-off climb surface is measured in the vertical plane containing the extended centreline of the runway. Where no object reaches the 2% (1:50) surface slope specified for runways where the code number is 3 or 4, the slope should be reduced until it touches the first immovable object or reaches 1.6% (1:62.5), whichever is the steeper. If the slope is reduced, the length of the surface should be increased to afford protection on the climb to a height of 1000 ft.
4. In the case of a take-off flight path involving a turn, the take-off climb surface is a complex surface such that the normal at any point on the flight path centreline is a horizontal line at the same height above surface origin as would have resulted from the application of a straight flight path. The edge of a TOCS (take-off climb surface) may be slewed in the direction of a turn away from the extended runway centreline up to a maximum of 15° splay. The portion of TOCS encompassing the new departure track should be the same shape and dimensions as the original TOCS measured relative to the new departure track. The opposite edge of the TOCS should remain unchanged unless there is another turning departure towards that side also, in which case, the edge may be slewed in that direction too.
5. The following table describes the characteristics of the take-off climb surface for all aerodrome (runway) references codes:

Table 1. Characteristics of the take-off climb surface for all aerodrome (runway) reference codes

Code number	**3 or 4**	**2**	**1**
Length of inner edge	180 m	80 m **(1)**	60 m **(2)**
Distance of inner edge from end of take-off run(TORA) **(3)**	60 m	60 m	30 m
Divergence (each side)	12.5%	10%	10%
Final width	1200 m **(4)**	580 m	380 m
Length	15000 m	2500 m	1600 m
Slope	2% (1:50)	4% (1:25)	5% (1:20)

1 & 2. Where clearway is provided, the length of the inner edge should be 150 m.

3. The take-off climb surface starts at the end of the clearway if the clearway length exceeds the specified distance.

4. When the intended track includes changes of heading greater than 15°, the final widthof the take-off climb surface for runways where the code number is 3 or 4 is increasedto 1800 m.

2.7 Approach surface slopes and dimensions

Table 2. Approach surface slopes and dimensions

	Precision instrument approach runways		**Non-precision instrument approach runways**		**Non-instrument runways**			
	Code number		**Code number**		**Code number**			
	3 or 4	**1 or 2**	**3 or 4**	**1 or 2**	**4**	**3**	**2**	**1**
Length of inner edge	280 m*	150 m	280 m*	150 m	150 m	150 m	80 m	60 m
Distance before threshold	60 m	60 m	60 m	60 m	60 m	60 m	60 m	30 m
Divergence each side	15%	15%	15%	15%	10%	10%	10%	10%
Length of first section	3000 m	3000 m	3000 m	2500 m	3000 m	3000 m	2500 m	1600 m
Slope of first section	2% (1:50)	2.5% (1:40)	2% (1:50)	3.33% (1:30)	2.5% (1:40)	3.33% (1:30)	4% (1:25)	5% (1:20)
Length of second section	3600 m	2500 m	3600 m					
Slope of second section	2.5% (1:40)	3% (1:33.3)	2.5% (1:40)					
Length of horizontal section	8400 m	9500 m	8400 m					

* The length of the inner edge may be reduced to 210 m for a runway where the LDA falls into the lowerthird of code number 3, and where, in the opinion of the ACAA, such a reduction is compatible with the use made of the runway.

3. AERODROME SAFEGUARDING

3.1 Objectives of aerodrome safeguarding

The objectives of aerodrome safeguarding are as follows:

- Provision of measures, enforceable by law, of control of the usable area/land in the vicinity of the aerodromes located in Albania and on the surfaces of flight trajectories.
- To ensure that the foreseeable construction development projects in the designated areas, in any form, do not violate the air navigation safety requirements and are in accordance with the operations of the airport.
- Creation of a process for allowing or not allowing constructions in designated areas around airports, inside and outside the Obstacle Limitation Surfaces (OLS).

3.2 Safeguarding scope

The common aim of all safeguarding is to assess the implications of any development being proposed within the vicinity of an established aerodrome to ensure, as far as practicable, that the aerodrome and its surrounding airspace is not adversely impacted by the proposal, thus ensuring the continued safety or aircraft operating at the location.

3.3 What is Aerodrome Safeguarding?

Safeguarding is the process by which the Aerodrome Operator can, in consultation with the Local Planning Authority (LPA) and within their capability, protect the environment surrounding the aerodrome from developments and activities that have the potential to impact on the aerodrome's safe operation. Aerodrome safeguarding covers several aspects. Its purpose is to protect:

a) the airspace around an aerodrome to ensure no buildings or structures may cause danger to aircraft either in the air or on the ground. This is achieved through both the 'Obstacle Limitation Surfaces' (OLS) and the 'Instrument Flight Procedure' (IFP).
b) the integrity of radar and other electronic aids to navigation by preventing reflections and diffractions of the radio signals.
c) aeronautical lighting, such as approach and runway lighting, by ensuring that they are not obscured by any proposed development and that any proposed lighting, either temporary or permanent, could not be confused for aeronautical ground lighting.
d) the aerodrome from any increased wildlife strike risk. In particular bird strikes, which pose a serious threat to flight safety.
e) aerodrome operations from interference by any construction processes through the production of dust/smoke, temporary lighting or construction equipment impacting on radar and other navigational aids.
f) aircraft from the risk of collision with obstacles through appropriate lighting.

g) aircraft from the risk of building induced turbulence.
h) aircraft from the risk from glint and glare, e.g. solar panels.

All the above will be taken into account by the aerodrome operator when assessing developmental proposals.

Creation and Safeguarding of Aerodrome Protected Areas are achieved through a process of control of the proposed developments, in order to:

- Protect the air blocks through which aircraft fly, preventing the penetration of surfaces designed to identify their low limits;
- Protect the integrity of radar and other electronic devices for air navigation, preventing reflections and breaking of relevant radio signals;
- Protect the visual devices as well as those for lighting during landing and take-off, preventing them from being obstructed or preventing the installation of other lighting that would cause confusion for them;
- Avoid increasing the risk of bird strikes to aircraft by preventing the breeding of dangerous bird species in the vicinity of the airport and, whenever possible, reduce the level of risk.

3.4 How to set up consultation

There are a number of ways an aerodrome operator can become involved in the planning consultation process. An aerodrome operator could submit their views:

- informally to the applicant prior to a planning application being made;
- if local arrangements have been agreed with the LPA;
- if they are a direct neighbour of a development (share boundary);
- or any application (as any member of the public can – there is no notification) all planning applications are published on LPA website.

Furthermore, the safeguarding map, which should be produced from the aerodrome operator, must be submitted to the LPA.
Since a copy of the safeguarding map is lodged with the LPA, the latter must inform the aerodrome operator regarding developmental proposals that fall within the safeguarding area.
The safeguarding map typically consists of a colour coded system covering the safeguarding area, defined by square coloured tiles, each one representing the height at which consultation should take place.

Note: Further details are given at Appendix 3. Generating a map for aerodrome protected areas and Appendix 4. Map of aerodrome protected area (example)

3.5 Details needed to assess an application

For the aerodrome operator to conduct an effective safeguarding assessment it is necessary to obtain as many details as possible regarding the proposal. This guidance material assumes that the application has come from a Local Planning Authority (LPA) although it is possible an aerodrome operator may receive a submission from a developer, prior to planning. The LPA/developer should provide the following documents as a minimum to an officially safeguarded aerodrome:

- A copy of the application for planning permission;
- Submitted plans showing the location of the development;
- A grid reference with at least 6 figures to each of "easting" and "northings";
- An elevation of the site (to an accuracy of 0.25 m above Ordnance Datum);
- Details of the dimensions, layout and height of the building or works to which the application relates.

3.6 Safeguarding Assessment

Notification of an application for a proposed development can be received in the form of consultation from an LPA or the LPA might do so informally when there is pre-application engagement or encourage an applicant to do so. Pre-application engagement with the aerodrome is encouraged by the Government, direct from an architect/developer or their representative.

The assessment should include, as a minimum, the impact of:

a) any development or change in land use in the aerodrome area;
b) any development which may affect the instrument flight procedures serving the aerodrome;
c) any development which may create obstacle-induced turbulence that could be hazardous to aircraft operations;
d) any development which may affect the performance of navigation aids;
e) the use of hazardous, confusing and misleading lights;
f) the use of highly reflective surfaces which may cause dazzling;
g) the creation of areas that might encourage wildlife activity harmful to aircraft operations.

It is essential that accurate records are kept at all consultations, even those on which no objections were raised. There may be occasions where the project has changed height or layout which could make a difference to the safeguarding or where a second or further planning application is submitted for a development on which comments have already been made. The information provided may differ between applications, e.g. a Recreation Centre at one application could be a Sports Facility at a second; a Leisure Park at a third; and the coordinates could be different. In addition, the construction materials or elevations may be altered.

Note: Aerodrome Protected Areas Assessment Form and Aerodrome Protected Areas Assessment Form for Temporary Obstacles are attached to this guidance material as ACAA-DAD-GM1-APAS-100, Rev. 00 and ACAA-DAD-GM1-APAS-101, Rev. 00.

The safeguarding process is further described in a flowchart at Figure 8.

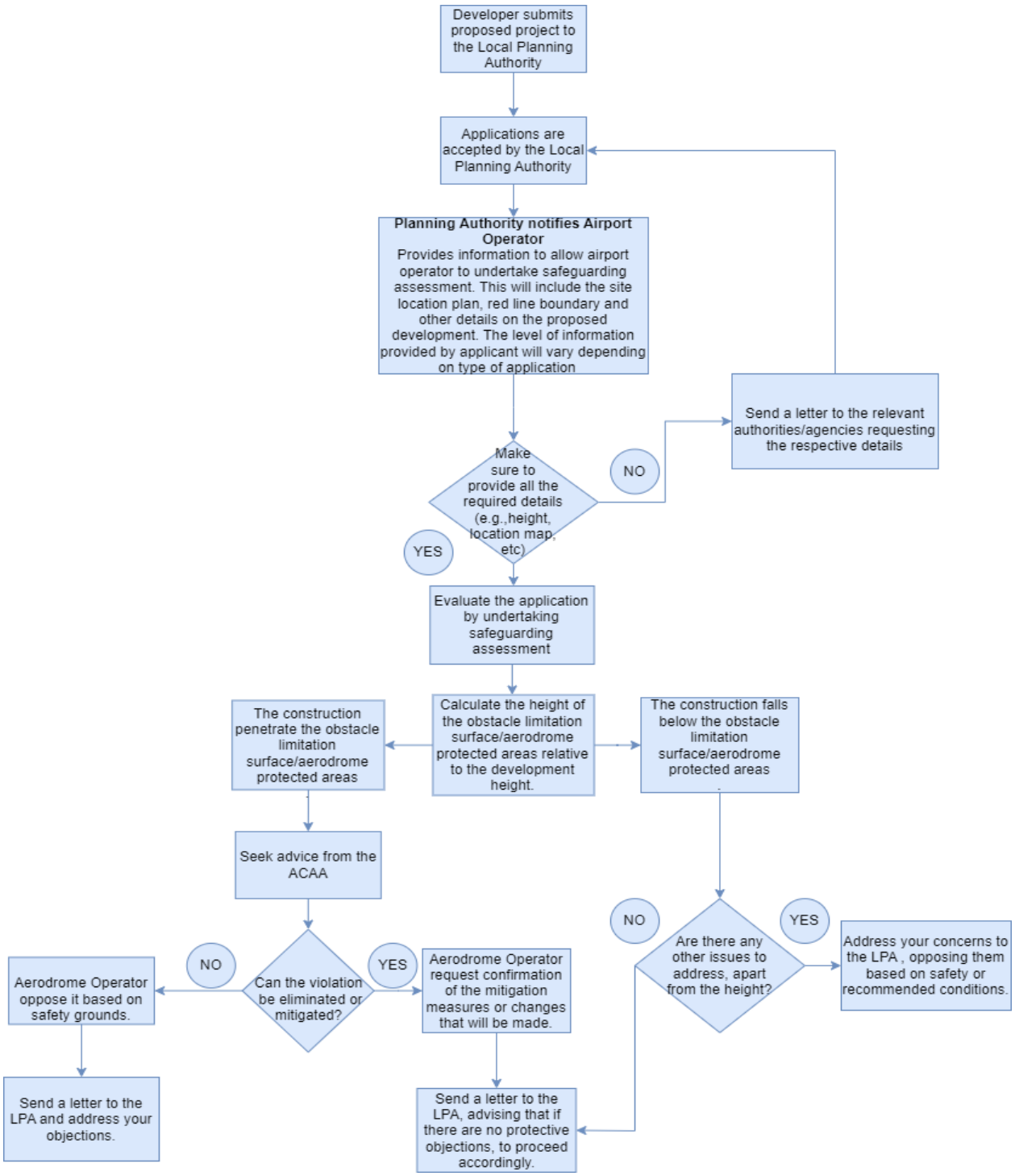

Figure 8. Safeguarding Process Flowchart

3.7 Insufficient information

Outline planning applications do not normally provide sufficient information to assess the impact a development may have on an aerodrome. They have to include an address, location and site plan. This information will only confirm whether the proposed development is located within the safeguarded area. If, at outline planning stage, you decide certain conditions may be appropriate (e.g. landscaping or lighting or height restriction) you should respond in a way that requests that these conditions are attached to any permission. It is important to remember that outline planning details can be changes without further consultation. In some cases, when it is clear that a proposed development would be unacceptable in principle at that location, you should respond accordingly. For example, if the proposed development falls within the area where the Take-off Climb, Approach or Transitional Surface prevails and the ground height almost meets it, then a structure in that position could present an unacceptable safety risk.

3.8 Other considerations

In addition to the above, aerodrome operations should be aware of the risks caused by human activities and land use in the vicinity of the aerodrome which should be assessed and mitigated. These should include:

- Obstacles and the possibility of induced turbulence;
- The dazzling caused by large and highly reflective surfaces;
- Sources of non-visible radiation, or the presence of moving, or fixed objects which may interfere with, or adversely affect, the performance of aeronautical communications, navigation and surveillance systems.

4. OBSTACLE RESTRICTION/CONTROL

4.1 Aerodrome staff designation and inspection program

Aerodrome operator should designate a member of his staff to be responsible for the continuing process of ensuring that aerodrome approach, departure and manoeuvring areas remain clear of obstacles that may jeopardize safety. This designates member of the staff must receive specific training on the OLS and must have the ability to use the necessary equipment to accomplish his mission. The aerodrome operator must maintain constant vigilance to prevent erection of obstacles around his aerodrome. The aerodrome operator should establish a programme of regular and frequent visual inspections of all areas around the aerodrome in order to be sure that construction activity or natural growth likely to infringe any of the obstacle limitation surfaces is discovered before it becomes a problem. This inspection programme should also include a daily observation of all obstacle lights, both on and off the aerodrome, and corrective action taken in event of light failure.

4.2 Obstacle control

When considering obstacle control the following should not be overlooked:

a) Objects which penetrate the approach surface are critical since they represent an erosion of the clearance between the final approach path, usually 3 degrees, and fixed or Mobile obstacles on the ground. On an approach where the approach surface is significantly obstructed, the safe operation of aircraft is ensured by raising the aerodrome approach meteorological minima. If the object penetrates into the approach surface, the landing threshold is displaced, effectively reducing the available landing distance. This can have an adverse effect on the regularity of aircraft operations and could impose payload penalties on landing aircraft;

b) The transitional surfaces are adjacent to the runway strip and approach surface. Penetration of them by an obstacle results in the reduction in the clearance available whilst carrying out an approach to land or during a missed approach procedure. Such obstacles may have an adverse effect on the aerodrome meteorological minima and may need marking and lighting;

c) Aircraft performance requirements, applicable to take-off and climb, require all aircraft to clear all obstacles by a minimum specified margin. For a multi-engine aircraft, that requirement includes the climb following failure of the critical engine. Objects which penetrate approach and take-off climb surfaces do not represent a degradation of safety standards but they may impose significant payload penalties on aircraft taking off;

d) The inner horizontal surface is more significant for VFR operations. It also provides

protection for circuiting aircraft following an instrument approach. It does not usually represent a critically limiting surface around a large aerodrome handling IFR traffic, except in so far that it extends beneath the approach surface;

e) The conical surface represents the obstacle limiting surface some distance from the aerodrome. It is often not practical to control obstacles which penetrate this surface, although it does usually provide a limit to new construction;

f) Obstacle control, to maintain or improve the Aerodrome Obstacle Chart - Type "A" obstacle profile, should be based on the clear understanding of the performance requirements of the aircraft regularly using the aerodrome or those proposed to be brought into regular use;

g) Any obstacles which are allowed to penetrate the established PANS-OPS surfaces could raise the minimum safe altitudes of the aerodrome instrument flight procedures. This could have an adverse effect on the regularity of aircraft operations.

5. IDENTIFICATION OF OBSTACLES

Identification of obstacles requires a complete engineering survey of all areas beneath the aerodrome obstacle limitation surfaces.

5.1 Initial survey

The initial survey should produce a chart presenting a plan view of the entire aerodrome and its environment. The scope of the chart should be to the outer limit of the conical, approach, and take-off climb surfaces. It will need to include profile views of all obstacle limitation surfaces. Each obstacle should be identified in both plan and profile with its description and height above the datum, which should be specified on the chart. Engineering field surveys can be supplemented by aerial photographs and photogrammetry to identify possible obstacles not readily visible from the aerodrome.

5.2 Visual observations and periodic surveys

Constant vigilance is required to ensure the control of obstacles. Periodic surveys should be conducted to ensure the validity of the information in the initial survey, at least once in three years to maintain the accuracy of the data. The aerodrome operator should make frequent visual observations of surrounding areas to determine the presence of new obstacles. Follow-up surveys should be conducted whenever significant changes occur. A detailed survey of a specific area may be necessary when the initial survey indicates the presence of obstacles for which a control programme is contemplated. Following completion of an obstacle control programme, the area should be resurveyed to provide corrected data on the presence or absence of obstacles. Similarly, revision surveys should be conducted if changes are made, or planned, to the aerodrome characteristics such as runway length, elevation or orientation. Changes in obstacle data arising from surveys are to be notified to the Aeronautical Information Service (AIS) as soon as practicable for promulgation to aircraft operators.

5.3 Obstacle penetration

The aerodrome operator must ensure that than an aeronautical study is carried out, as described in Figure 9. When a new obstacle is detected, the aerodrome operator must ensure that the information is passed on to pilots, through NOTAM, in accordance with the standards for aerodrome reporting procedures detailed in the aerodrome manual. The information on any new obstacle must include:

a) the nature of the obstacle — for instance structure or machinery;
b) the geographic coordinates in WGS-84;
c) Elevation (MSL) and height of the obstacle in relation to the aerodrome elevation;
d) If the obstacle is marked / lighted; and

e) If it is a temporary obstacle — the time it is an obstacle.

The aerodrome operator must also check if the owners of the obstacles comply with regulations relating to marking and lighting obstacles (Council of Ministers Decision No. 729, dated 16.11.2022 "For the procedures and rules of equipment with aviation obstacle marking", Minister's Order No. 130/2012 "Regulation for certification, registration of aerodromes and operation obligations and responsibilities falling on aerodrome operators, transposing Annex 14" and Minister's Order No. 170/2022 "Regulation for determining the requirements and administrative procedures related to the aerodromes in the Republic of Albania"), both on the aerodrome and in the vicinity of aerodromes, which could otherwise present a hazard to aircraft. The aerodrome operator must implement and update an obstacle database in order to achieve this mission.

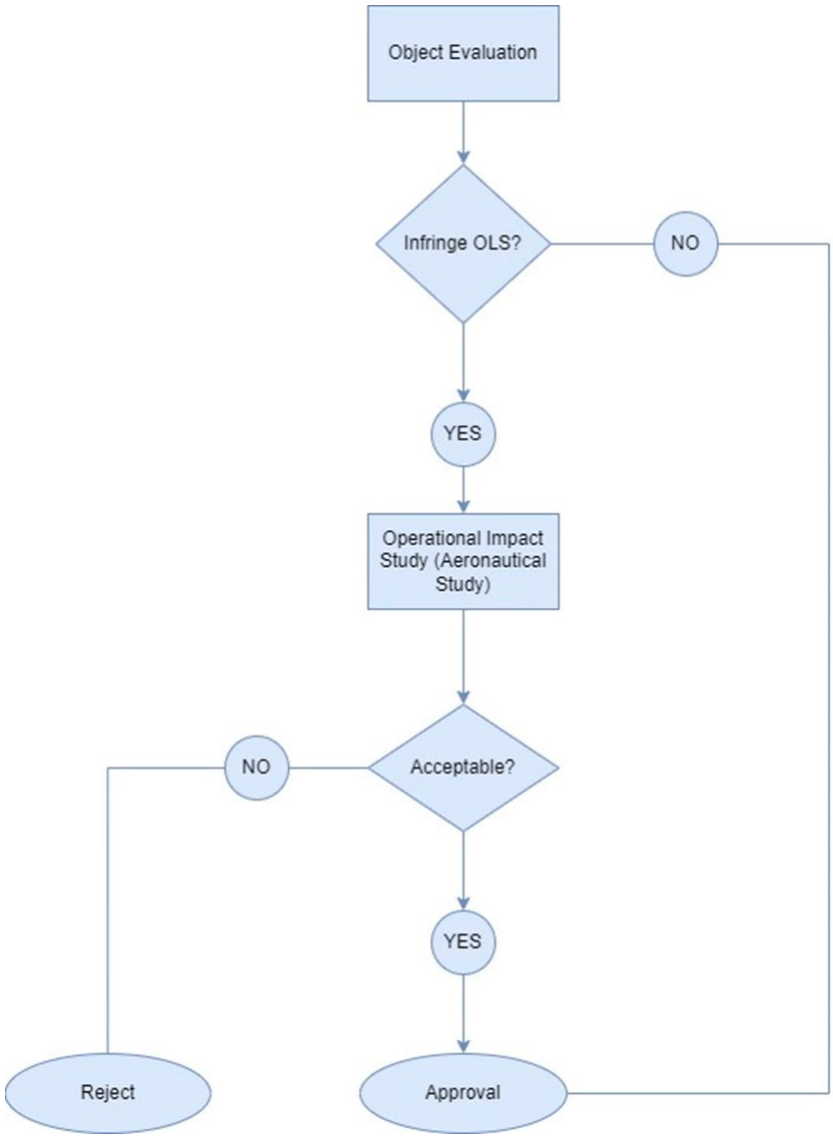

Figure 9. Aeronautical Study Flowchart

5.4 Promulgation

It is important that all those responsible for the provision of terrain and obstacle data are aware of the applications in which this data may be utilised, as these determine the data quality requirements.

The purpose of the aerodrome survey is to provide eTOD necessary to:

1. control and monitor the aerodrome obstacle environment;
2. be promulgated in the AIP, on aeronautical charts and other AIS products;
3. be used in air navigation applications such as:
    i. ground proximity warning systems with forward looking terrain avoidance functions and minimum safe altitude warning systems;
    ii. determination of contingency procedures for use in the event of an emergency during a missed approach or take-off;
    iii. aircraft operating limitations analysis;
    iv. instrument flight procedure design (including circling procedure);
    v. determination of en-route "drift-down" procedures and en-route emergency landing locations;
    vi. advanced surface movement guidance and control systems;
    vii. aeronautical chart production and on-board databases;
    viii. geofencing; and other purposes.

A detailed survey of a specific area may be necessary when the initial survey indicates the presence of obstacles for which a control programme is contemplated. Following completion of an obstacle control programme, the area should be resurveyed to provide corrected data on the presence or absence of obstacles. Similarly, revision surveys should be conducted if changes are made, or planned, to the aerodrome characteristics such as runway length, elevation or orientation. Changes in obstacle data arising from surveys are to be notified to the Aeronautical Information Service (AIS) as soon as practicable for promulgation to aircraft operators. Furthermore, the initial survey and the revision surveys shall be delivered to the ACAA. The latter shall then inform the LPAs regarding changes in the obstacle data arising from the survey.

6. METHODS OF CONTROL

The viability and safety of aerodrome use by aircraft operators can be assured by establishing effective obstacle control to maintain the obstacle limitation surfaces. Control can be achieved in a number of ways by:

a) Enactment of height zoning protection by the local government authority;
b) Establishing an effective obstacle removal programme; or
c) Purchasing of easement or property rights or all of these.

6.1 Height Zoning

The objective of height zoning is to protect the aerodrome obstacle limitation surfaces from intrusion by manmade objects and natural growth such as trees.

This is done by the enactment of ordinances identifying height limits underneath the aerodrome obstacle limitation surfaces. The responsibility for the enactment of such an ordinance is a matter between the aerodrome operator and the local government authority.

To implement height zoning, a zoning map should be prepared for the guidance of local government authority. The map should indicate all zoning criteria and should cover the aerodrome design obstacle limitation surfaces and where applicable, the take-off flight path for the Aerodrome Obstacle Chart Type "A" and any PANS-OPS surfaces.

6.2 Obstacle Removal

When obstacles have been identified, the aerodrome operator should make every effort to have them removed, or reduced in height so that they are no longer an obstacle. If the obstacle is a single object, it may be possible to reach agreement with the owner of the property to reduce the height to acceptable limits without adverse effect. Examples of such objects are a tree, a chimney, or a cell phone tower.

In the case of trees, which are trimmed, agreement should be reached in writing with the property owner to ensure that future growth will not create new obstacles. Property owners can give such assurance by agreeing to trim the trees when necessary, or by permitting access to the premises to have the trimming done by the aerodrome operator's representative. It is important to assess the growth rate of trees and trim them low enough so that the ensuing growth will be below the obstacle surface until the surface is next due for survey.

Some aids to navigation both electronic, such as ILS components, and visual, such as approach and runway lights, constitute obstacles which cannot be removed. Such objects should be designed and constructed to be frangible, and mounted on frangible couplings so that they will

fail on impact without significant damage to an aircraft.

6.3 Easements or Property Rights

In those areas where zoning is inadequate, the aerodrome operator may take steps to protect the obstacle limitation surfaces by other means. Examples of zoning inadequacies might be locations close to runway ends or where obstacles exist. Examples of other means might be such as gaining easements or property rights. They should include removal or reduction in height of existing obstacles and measures to ensure that no new obstacles are allowed to be erected in the future.

Where agreement can be reached for the reduction in height of an obstacle, the agreement should include a written aviation easement limiting heights over the property to specific levels unless effective height zoning has been established.

6.4 Marking and Lighting of Obstacles

Where it is impractical to eliminate an obstacle, it should be appropriately marked or lighted, or both, to be clearly visible to pilots in all weather and visibility conditions.

The marking and lighting of obstacles is intended to reduce hazards to aircraft by indicating the presence of obstacles. It does not necessarily reduce operating limitations which may be caused by the obstacle. Obstacles should be marked and, if the aerodrome is used at night, lighted, except that:

a) Lighting and marking may be omitted when the obstacle is shielded by another obstacle; and
b) The marking may be omitted when the obstacle is lighted by high intensity obstacle lights by day.

Vehicles and other mobile objects, excluding aircraft, on movement areas of aerodromes should be marked and lighted, unless they are used on apron areas only.

The aerodrome operator should make a daily visual inspection of all obstacle lights on and around the aerodrome, and take steps to have inoperative lights repaired.

6.5 Obstacle Shielding

The principle of obstacle shielding is employed to permit a more logical approach to restricting new construction and to the requirements for marking and lighting of obstacles. Shielding principles are employed when some object, an existing building or natural terrain, already penetrates above one of the aerodrome design obstacle surfaces. If the obstacle is permanent,

then additional objects within a specified area around can penetrate the surface without being obstacles. The original obstacle dominates or shields the surrounding area.

An existing obstacle within the approach and take-off climb area is called the critical obstacle. Where a number of obstacles exists closely together, the critical obstacle is the one which subtends the greatest vertical angle measured from the appropriate inner edge.
As illustrated below in Figure 10, a new obstacle may be assessed as not imposing additional restrictions if:

a) When located between the inner edge and the critical obstacle, the new obstacle is below a plane sloping downwards at 10 % from the top of the critical obstacle toward the inner edge;
b) When located beyond the critical obstacle from the inner edge end, the new obstacle is not higher than the height of the permanent obstacle;
c) Where there is more than one critical obstacle within the approach and take-off climb area, and the new obstacle is located between two critical obstacles, the height of the new obstacle is not above a plane sloping downwards at 10 % from the top of the next critical obstacle.

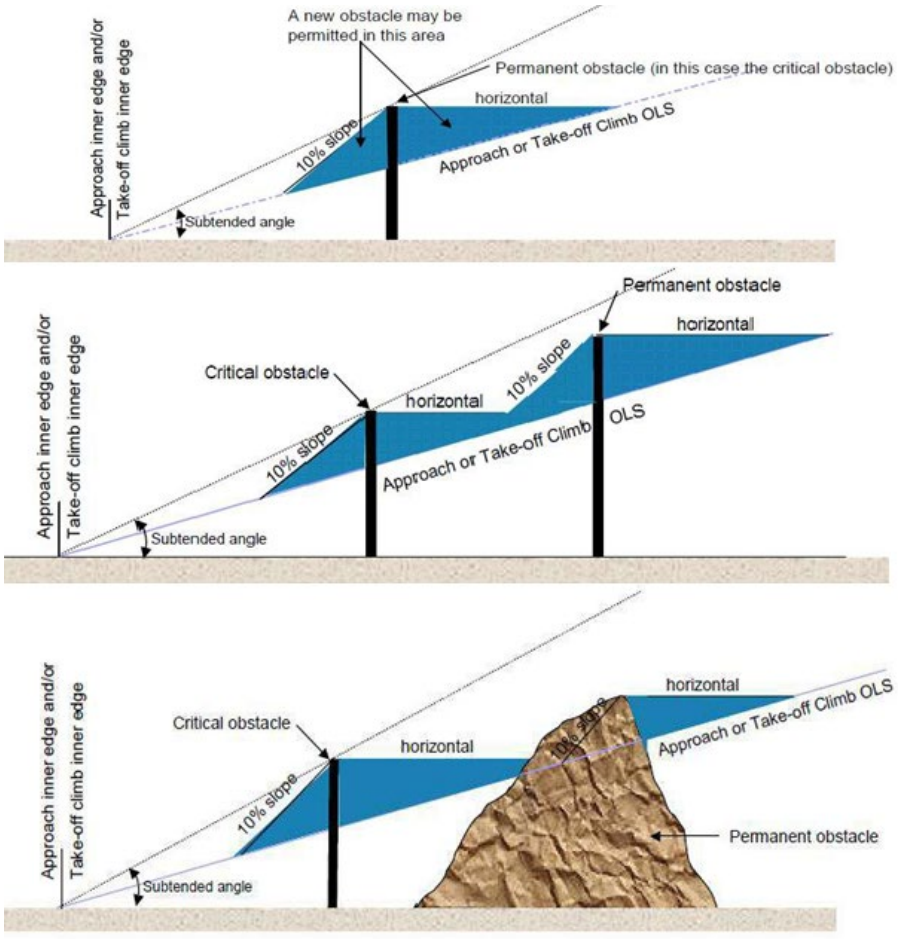

Figure 10. Shielding of obstacles penetrating the approach and take-off climb surfaces

6.6 Aeronautical Study

When the shielding principal mentioned on subchapter 6.5 “Obstacle Shielding” cannot be satisfied, the Obstacle owner must conduct an aeronautical study in order to assess the potential impact that this obstacle may have on aircraft operations as is it shown in Figure 9. “Aeronautical Study Flowchart”. An aeronautical study is a study of an aeronautical problem to identify possible solutions and select a solution that is acceptable without degrading safety. For this purpose, the minimum items listed below will be considered:

- Obstacle Limitation Surfaces (OLS), including the Obstacle Free Zone (OFZ);
- PAPI obstacle protection surface;
- ICAO type A surface assessment: Any restrictions, that would be imposed on aircraft operations shall be considered and mitigated.
- Significant effect on radio altimeters (if the obstacle in the inner approach surface): demonstration should be made (flight control system is not affected);
- Effects on communication, navigation and surveillance facilities: Two assessment shall be carried out with regards to CNS facilities:
    - Analysis of Communications, Navigation and Surveillance (CNS) facilities Building Restricted Areas (BRA)
    - Radio electric simulations for those CNS facilities whose BRA are infringed (and, when deemed necessary, also for facilities whose BRA are not infringed);
- Airport flight procedures (VFR/IFR);
    a) **Instrument Flight Procedures:** In this type of study at least instrument approach procedures, standard instrument departures and standard arrivals should be evaluated. This evaluation shall cover:
        - Instrument procedures currently published in AIP;
        - Those planned for air navigation or within the aerodrome Master Plan;
        - Visual Segment Surface (VSS) of each approach procedure;
    b) **Visual Flight Procedures:** Visual flight procedures currently published in AIP gathered within the Visual Approach Chart (VAC) should be checked. The study should check if an aircraft in visual conditions, on an aerodrome traffic circuit or through the visual tracks with destination/departure to/from the aerodrome, at the notification points determined within the VAC, could be affected by the obstacle.
- Safety Assessment.

6.7 Safety Assessment

The primary objective of a safety assessment is to assess the impact of a safety concern such as a design change or deviation in operational procedures or provisions at an existing aerodrome.
Such a safety concern can often impact multiple stakeholders, therefore safety assessment often need to be carried out in a cross-organizational manner, involving experts from all the involved

stakeholders. Prior to the assessment, a preliminary identification of the required tasks and the organizations to be involved in the process is conducted.

The safety risk assessment process is more detailed in Appendix 2. "Safety Assessment Flowchart" and will include at least:

- Analyse the risk of the infringement and assess the severity and probability of the identified risks;
- Propose the measures to mitigate the identified risks;
- Development of an implementation plan for the mitigation measures and conclusion of the assessment;
- Determine the level of safety after mitigation.

7. OBSTACLE MONITORING

7.1 Objects inside the boundaries of the OLS

Regarding objects outside the boundaries of the OLS, point 2, Article 60 of the Law No. 96/2020 "Air Code of the Republic of Albania" defines the provisions as follows:
No construction permit, within the aerodrome protected areas, is granted without the approval of ACAA, after taking into account the official opinion the aerodrome operator.

Furthermore, Details of the procedures for inspection of the aerodrome movement area and obstacle limitation surface, and for obstacle control at an aerodrome are required to be presented in the aerodrome manual.

Particulars in the aerodrome manual of the procedures for the inspection of the aerodrome movement area and obstacle limitation surface must include details of the following:

a) Arrangements for carrying out inspections, including runway friction and water depth measurement on runways and taxiways during and outside normal hours of aerodrome operations;
b) Arrangements and means of communicating with ATC during an inspection;
c) Arrangements for keeping an inspection logbook and the location of the logbook;
d) Details of inspection intervals and times;
e) Inspection checklist;
f) Arrangements for reporting the results of inspections and for taking prompt follow- up actions to ensure correction of unsafe conditions; and
g) The names and roles of persons responsible for carrying out inspections and their contact numbers during and after working hours.

Particulars in the aerodrome manual for obstacle control must contain details setting out the procedures for:

a) Monitoring the obstacle limitation surfaces and Type A chart for obstacle in the take-off surface;
b) Controlling obstacles within the authority of the aerodrome operator;
c) Monitoring the height of buildings or structures within the boundaries of the obstacle limitation surfaces;
d) Controlling new developments in the vicinity of the aerodrome;
e) Notifying ACAA of the nature and location of obstacles and any subsequent addition or removal of obstacles for action as necessary, including amendment of AIS publications.

7.2 Objects outside the boundaries of the OLS

Regarding objects outside the boundaries of the OLS, point 3, Article 60 of the Law No. 96/2020 "Air Code of the Republic of Albania" defines the provisions as follows:
The construction permits outside the aerodrome protected areas is granted by the consent of ACAA, in cases when the construction height exceeds 100 meters above the ground surface. ACAA may impose restrictions on installations higher than 30 meters, which are placed on natural or artificial heights, in cases where the highest point of these installations exceeds the highest height, in a radius of 1.5 kilometres around installation, with more than 100 meters.

Furthermore, point 2, Article 8 "Protection of the aerodrome surroundings" of the Minister's Order No. 170/2022 "Regulation for determining the requirements and administrative procedures related to the aerodromes in the Republic of Albania", defines the requirements as follows:
The Civil Aviation Authority shall ensure that consultations are carried out regarding the impacts on the technical safety of constructions proposed to be built beyond the limits of OLS and protective surfaces, as well as other surfaces related to the aerodrome and which exceed the height determined by the Civil Aviation Authority.

Article 3 of the Council of Ministers Decision No. 729, dated 16.11.2022 "For the procedures and rules of equipment with aviation obstacle marking" defines the requirements regarding the obstacles in the Republic of Albania that after conducting an assessment need to be marked and/or illuminated as per regulation.

Article 5 "Objects outside the boundaries of obstacle limitation surfaces" of The Council of Ministers Decision No. 729, dated 16.11.2022 "For the procedures and rules of equipment with aviation obstacle marking" defined the requirements as above:
Obstacles (objects higher than 150 m) are marked and illuminated, except cases when these obstacles are illuminated by high intensity obstacle lighting.
Other objects outside the OLS are marked and/or lighted if an aeronautical study shows that the object is a hazard to aircraft operations.

Thus, if an aeronautical study shows that an object is an obstacle for air navigation purposes and imposes a hazard that cannot be mitigated by marking and/or illumination, then ACAA will impose restrictions on this object by removing or shortening its height.

If an aeronautical study shows that the hazard that this obstacle imposes to air navigation purposes can be mitigated be marking and/or illumination, then the developer/object owner must follow the principles of markings and lighting of mobile and fixed objects outside of the OLS as further explained at the Council of Ministers Decision No. 729, dated 16.11.2022 "For the procedures and rules of equipment with aviation obstacle marking"

8. APPENDIXES

Appendix 1 Completing a safeguarding assessment (structures)

1. Identify the location of the proposed development on a suitable map.
2. Measure the distance of the site from the runway. If the site layout does not clearly indicate the exact location of the structure, use the part of the site nearest to the aerodrome to:
    a. determine the most critical, normally the highest, point of the proposed structure (but remember if it sits below a sloping surface, the part closest to the runway may be the most critical regardless of height);
    b. establish the ground height and add the height of the structure to achieve an above mean sea level (AMSL);
    c. calculate the height of the applicable OLS/IFP and compare with AMSL measurement.
3. Generate a "safeguarding assessment form", recording all relevant information including technical safeguarding comments, as in ACAA-DAD-GM1-APAS-100, Rev. 00 Form or ACAA-DAD-GM1-APAS-101, Rev. 00.
4. Consider the potential impact of the proposal on all aspects of safeguarding as described in previous chapters, its acceptability and, if resulting in an infringement to the OLS/IFP or other safeguarding considerations, possible objection or, if appropriate, mitigations.
5. Respond to the LPA or developer, as appropriate, clearly stating your response with supporting reasons for any objection. If you have lodged an objection it is prudent to follow up with the LPA to ensure your objection was considered during the planning assessment.
6. Keep a record of all calculations and correspondence, and of the reasoning behind the decision made.
7. Retention of Records. Under the aerodrome's Safety Management System (SMS), accurate records should be kept of all consultations, even those upon which no objections were raised. There may be occasions when you will need to demonstrate your safeguarding assessment for a proposal and the response offered. There is no defined timeline for retention of records, although for those assessments where you have objected/requested conditions on the application, it is recommended that you retain these for a period of circa 3 years.

Appendix 2 Safety Assessment Flowchart

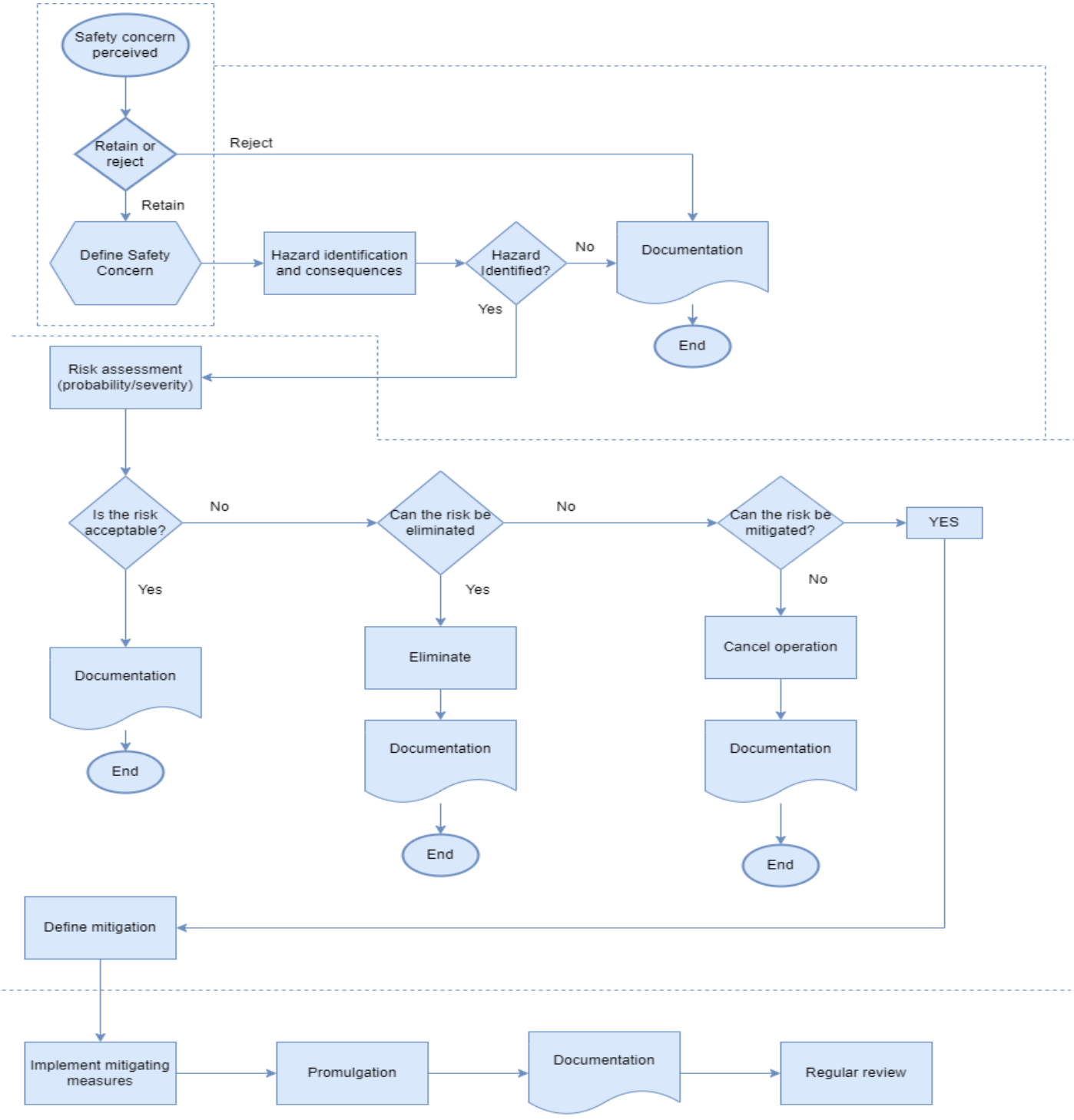

Figure 11. Safety Assessment Flowchart

Appendix 3 Generating a map for aerodrome protected areas

1. The standard maps currently used for civil aerodromes reflect the need for the protection of certified surfaces around aerodromes and have a square format superimposed on the national grid. In this system, each grid square is coloured to represent the most critical interaction between the bounded obstacle surface and ground elevation within that square. If necessary, it is acceptable to reduce the height notice within a square by including the safety factor. The following colour codes are commonly used:
   Grey - All developments must be noted;
   Red - Developments that exceed 10 m from the aerodrome must be marked;
   Green - Developments that exceed 15 m from the aerodrome must be marked;
   Yellow - Developments that exceed 45 m from the aerodrome must be marked;
   Blue - Developments that exceed 90 m from the aerodrome must be noted;

2. Future developments can be shown on the map. First you need to decide what you want to insure. Is it the existing configuration of the aerodrome or another configuration planned for the future? Is it about full use of the infrastructure or limited use? Is it intended to install radar or other navigation equipment?
   If e.g. should the radar be moved to a new position in the near future, both positions can be marked on the map and secured simultaneously. The map may also be designed to take into account other circumstances affecting the use of airspace around the aerodrome.

3. To generate the map for the Airport Protected Areas, first define the Aerodrome (Runway) Reference Codes. The code consists of a number and a letter and is determined by selecting the higher declared value of Distance Available for Take-off (TODA) or Distance Available for Acceleration-Stopping (ASDA). It indicates the extent of the lateral, longitudinal and slope planes of the airspace and the ground surface surrounding each runway, which must remain free of obstacles.

4. After creating the Aerodrome (Runway) Reference Code, you may find that the following must be considered when protecting each runway:
   a. Track naming and magnetic direction;
   b. If the track is Instrumental or Visual;
   c. The local coordinates (National Grid Reference) and the height, in meters, of the following data:
      i) start and end of Landing Disposition Distance (LDA) (limit);
      ii) start and end of Runway Available for Take-off (TORA);
      iii) end of ASDA and TODA.
   d. Local coordinates (National Grid Reference) for:
      i) the midpoint of the main runway (if it is under 1800 m long) for determining the internal horizontal and conical surfaces;

ii) Aerodrome Reference Point for determining the external horizontal surface (where applicable).

5. After identifying the current and future landing and take-off distances, you should base the map on the most demanding elements of the existing and planned aerodrome features. This will enable the map to be used as a "worst case" reference.

6. Track Strip and Limited Obstacle Surfaces
   Once you have identified the current and future landing and take-off distances, you can sketch the runway strip and limited obstacle surfaces. The starting point is the Aerodrome (Runway) Reference Code. When the runway strip is marked on the map, you can add the approach surface slope and dimensions, then the lift surfaces, transition surfaces, inner horizontal surface, conical surface, and outer horizontal surface.

7. Instrument Flight Procedures
   Protected areas for instrument flight procedures are complex and if they are to be provided then expert advice should be sought as to their exact shape and location. It cannot be assumed that limited obstacle surfaces will provide sufficient protection for instrument flight procedures.

8. Technical locations
   Add parameters for Airport Protected Areas for technical locations, such as telecommunications facilities. To understand which criteria are applicable, it will be necessary to consult the service provider.

Appendix 4 Map of Aerodrome Protected Areas

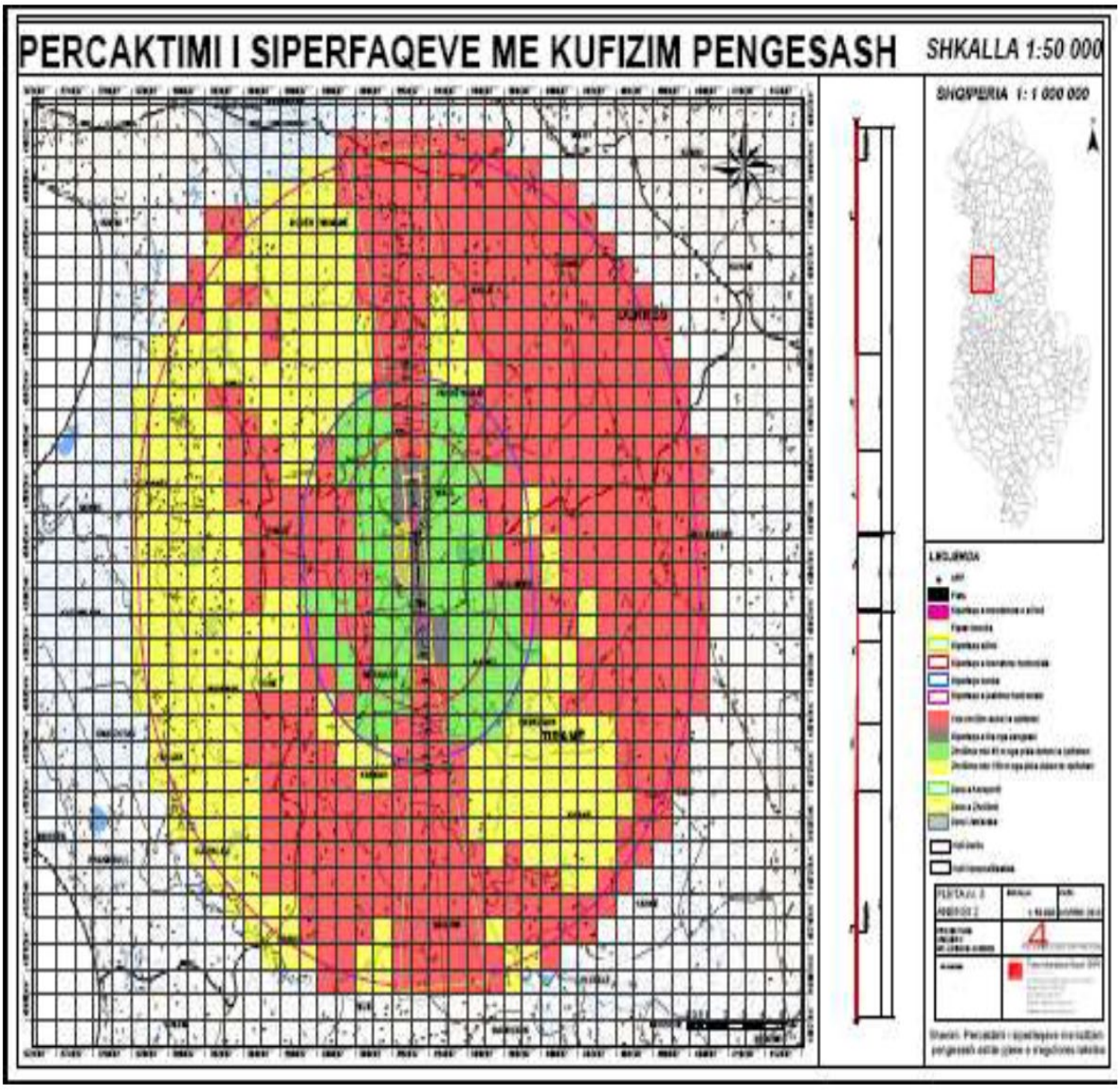

Figure 12. Map of Aerodrome Protected Areas (Example)

Aerodrome Protected Areas Assessment Form			
To AO:			
From:			
Through:			
cc:			
Date:			
File reference:		**Documents enclosed:**	
Aerodrome:			
Location of the site:			
Description of the development:			
Received date of application:			
Type of application:	Full ☐ Outline ☐		
1.	Ordinance Survey Coordinates:	E	
		N	
2.	Aerodrome Protected Areas Colour Zone:		
3.	Height of proposed structure above ground level:		
4.	Height of ground level at development location:		
5.	Overall maximum height of proposed structure:		
6.	Approved overall maximum height of proposed structure:		
Cross reference:			
Comments:			

Aerodrome Protected Area Assessment Form for Temporary Obstacles			
To AO:			
From:			
Through:			
cc:			
Date:			
File reference:		**Documents enclosed:**	
Aerodrome:			
Location of the site:			
Description of the development:			
Received date of application:			
Type of application:	Full ☐ Outline ☐		
1.	The precise location of the equipment is to be provided on an Ordnance Survey Grid. Either a reference to at least six figures for Easting's and Northing's or market out on a map that shows the Ordnance Survey Grid.	E	
		N	
2.	The maximum operating height in meters Above Ordnance Datum (AOD) or the height of crane Above Ground level (AGL) plus ground level in AOD.		
3.	Information must be provided on the type of crane or tall construction equipment that is to be used such as: tower crane, mobile crane etc.		
4.	The radius of the jib or boom of a fixed crane:		
5.	The area of operation of a mobile crane:		
6.	The intended dates and times of operations:		
7.	Applicant's name and contact details:		
8.	Contact details for the crane when operating:		
Cross reference:			
Comments:			