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# Embracing the Change
# OLS Transformation

**RC Raman**
**Technical Officer, AOI,**
**ICAO, Montreal**

# Contents

- Need for change
- Proposed changes
- Aeronautical study
- Next Steps

## The Objective

To 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.

## The Current Scenario

- SARPs in Annex 14, Vol 1, Chapter 4 on OLS
- Developed before the 1970’s
- Not addressing capabilities of the modern aircraft operations
- 38th ICAO Assembly called for a review of obstacle limitation surfaces
- OLS Task Force of ADOP was set up

## The Challenges

- Harmonize the different controlling and assessment surfaces found in ICAO Annex, PANS & Docs
- Design surfaces that are applicable today and adaptable to future operations
- Assess the sufficiency of OLS in safeguarding operations
- Develop a set or sets of surfaces
  - with clear purposes and characteristics so that only surfaces required are adopted
  - that are performance based and
  - adaptable to the type of operations conducted at the aerodrome

## Proposed Changes

- OLS comprise of two sets of surfaces:
  - Obstacle free surfaces (OFS) and
  - Obstacle evaluation surfaces (OES).

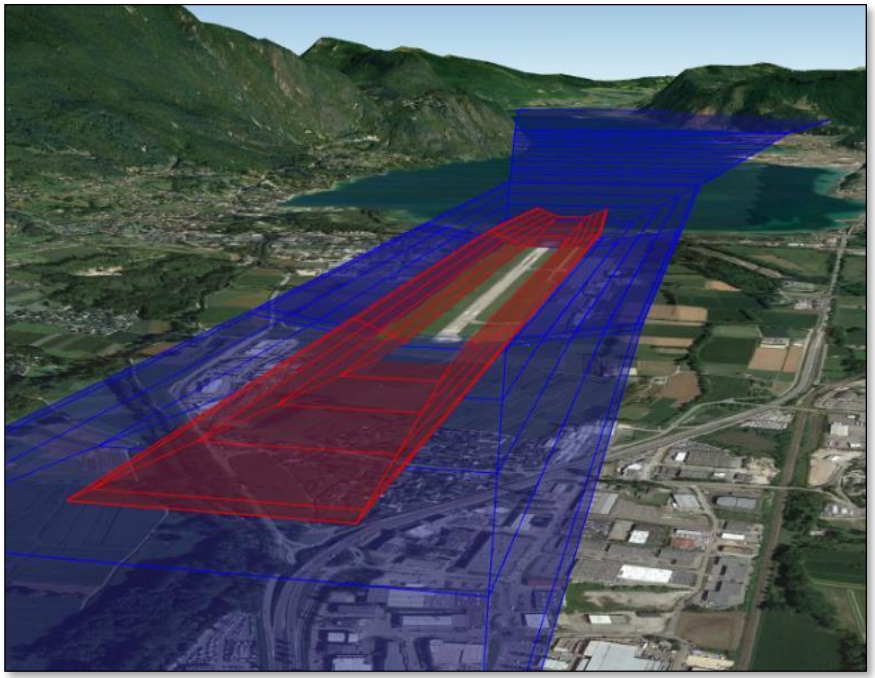
- They have distinct purposes and are applied based:
  - on the type of runway,
  - Aeroplane Design Group (ADG) and
  - the flight procedures available for that runway.

## Obstacle Free Surfaces (OFS)

- Surfaces that are applied within a defined airspace in the immediate vicinity of the aerodrome.
- To protect the existing and future operational capacity of the aerodrome by limiting obstacles.
- Intended to preserve accessibility of the aerodrome by containing standard operations (straight-in approaches) with a high level of probability.
- Hard surfaces to be kept free from obstacles except for existing obstacles and/or terrain which would have been assessed earlier.

# Principles of OFS

- Consider operations that can hardly adapt to obstacles:
  - Approaches, go-arounds and balked landings.
  - Take-off climbs
- For fixed and mobile objects around all runways
- Strict obstacle limitations.



## Obstacle Evaluation Surfaces (OES)

- Applied in a defined airspace, in addition to the OFS to be evaluated against obstacles.

- Act as triggering surfaces used in determining the acceptability of obstacles in ensuring safety and regularity of operations at the aerodrome.

- Penetration by terrain or obstacles are to be evaluated as they may adversely affect the safety or accessibility of the intended aircraft operations.

## Obstacle Evaluation Surfaces (OES)

- OES of standard dimensions are proposed to cover the most common types of operations
- OES may be modified to address operations varying from the ones supporting the standard OES dimensions
- OES with specific characteristics and dimensions can be adopted

# The Aeroplane Design Group

Dimensions of OFS and OES are determined based on **Aeroplane design group (ADG)** categorization.

The aeroplane design group utilises two criteria

- the aircraft's indicated airspeed at threshold and
- the aeroplane wingspan.

# The Aeroplane Design Group

| Aeroplane design group | Indicated airspeed at threshold | | Wingspan |
|---|---|---|---|
| I | Less than 169 km/h (91 kt) | and | Up to but not including 24 m |
| IIA | Less than 169 km/h (91 kt) | and | 24 m up to but not including 36 m |
| IIB | 169 km/h (91 kt) up to but not including 224 km/h (121 kt) | and | Up to but not including 36 m |
| IIC | 224 km/h (121 kt) up to but not including 307 km/h (166 kt) | and | Up to but not including 36 m |
| III | Less than 307 km/h (166 kt) | and | 36 m up to but not including 52 m |
| IV | Less than 307 km/h (166 kt) | and | 52 m up to but not including 65 m |
| V | Less than 307 km/h (166 kt) | and | 65 m up to but not including 80 m |

# ARC to ADG

Aeroplane reference code

Reference field length of the demanding aircraft

Aeroplane design group

Indicated airspeed at threshold of the demanding aircraft

Local factors

Expected aeroplanes

Traffic planning

| Code number | 1 | 2 | | 3-4 | | | |
|---|---|---|---|---|---|---|---|
| Aeroplane design group | I | IIA | IIB | IIC | III | IV | V |

# Aeronautical Study

- *An aeronautical study is a process of examining an aeronautical concern by assessing its impact on safety and regularity of aircraft operations and identify, if need be, possible mitigation measures.*

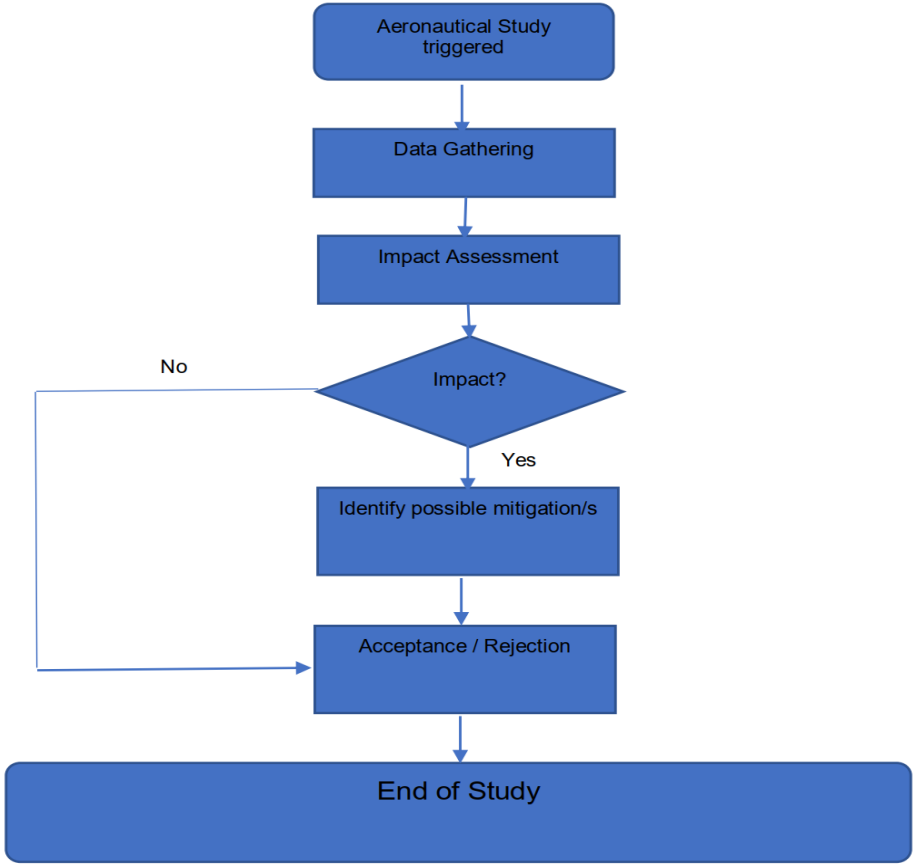
- Triggers :
  - Penetration of OFS and OES;
  - Characteristics and purpose of object;
  - Anytime requested or reported.

- A New Chapter in PANS-Aerodromes (Doc 9981)

## The Stake holders in Aeronautical studies

- Civil Aviation Authority
- Proponent of the proposed construction/development
- Aerodrome operator
- Air Navigation Service Providers
- Flight procedure designers
- Aircraft operators (commercial aviation and the military)
- Appropriate authorities (e.g.  land use planner, military etc)

# Aeronautical study



# ICAO Documents *(being reviewed…)*

- Annex 14, Vol I
- Annex 4
- Annex 15
- PANS – Aircraft Operations (Doc 8168)
- PANS- Aerodromes (Doc 9981)
- PANS – AIM (Doc 10066)
- Airport Services Manual, Part 6 (Doc 9137)

| Finalization of OLS Materials | Preliminary Review | ICAO State Letter Circulation | State Letter Final Review | ICAO Council Adoption | Effective Date | Applicable Date |
|---|---|---|---|---|---|---|
| Q4 2022 | Q1 2023 | April 2023 | Late Fall 2024 | Q1 2025 | July 2025 | Nov 2028 |

- ICAO aims to enhance awareness in the industry and promote cooperation between counterparts in terms of OLS related issues.
- In the future OLS related workshops and seminars can be organized.
- Specific audience targeted training and courses could be developed as necessary.

# Thank you!