



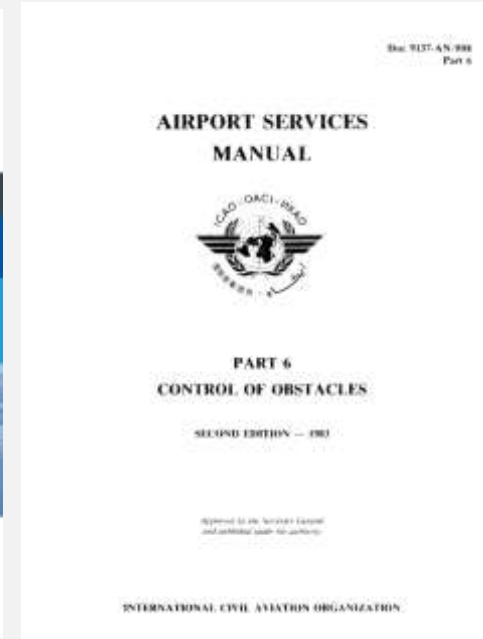
Report of Applications of Shielding Principle in Civil Airport Clearance

China
4 July 2023

SUMMARY



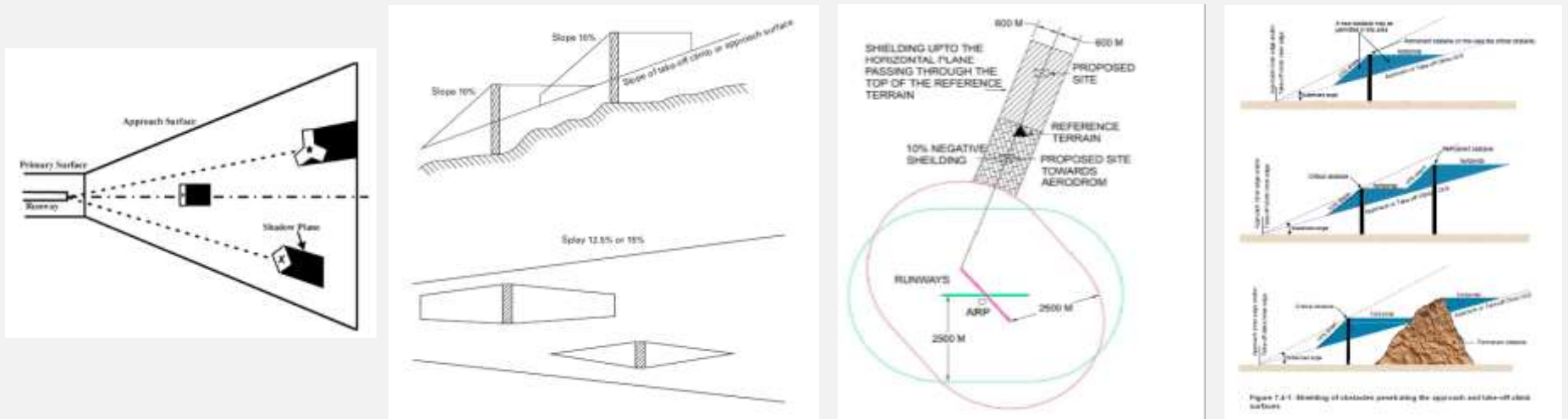
The application of the shielding principle of airport OLS is very important for the safe and efficient operation of airport and local economic development. At present, the application of the shielding principle lacks relevant normative guidance. The ICAO Annex 14, Aerodromes and Airport Service Manual (Doc 9137), Part 6 - Control of Obstacles did not put forward specific shielding area and shielding method. It provides the application of shielding principle which may compromise safety risk to the operation of airport and restricts the application of shielding principle in various countries. Therefore, it is necessary to study the relevant rules and application methods of shielding principle in civil airport clearance.



1.INTRODUCTION



The application of shielding principle is not only related to flight safety, but also closely related to economic development. Scientific and reasonable application of shielding principle is an important guarantee for flight safety and efficient operation of an airport, and an important link of airport clearance protection. The establishment of relevant rules and applications of shielding principle of airport OLS will help countries to understand and apply to the shielding principle. The rules and methods of shielding should be clarified to further standardize and guide the application of shielding principle, avoid the construction of overhigh projects, reduce safety risks, and strengthen the management of airport clearance protection.



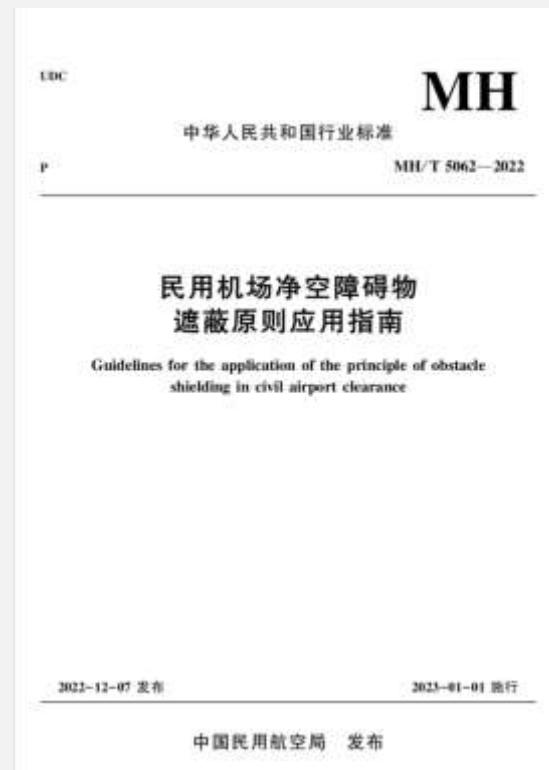
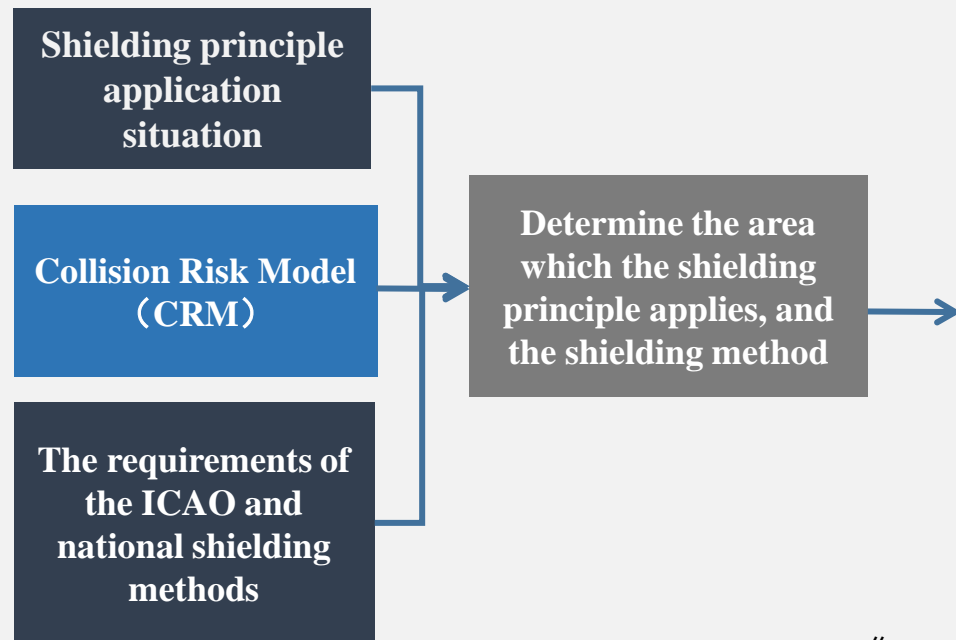
Many countries internationally have established their own standards for shielding principles, but the methods are slightly different.

1

This paper discussed the application status and existing problems of the shielding principle of OLS in airport.

2

The shielding areas and methods should cover for the transition surface, take-off climbing surface, approach surface, inner horizontal surface and conical surface in the restricted surface of airport obstacles, and put forward the opinions on the shielding rules scheme and matters for attention.



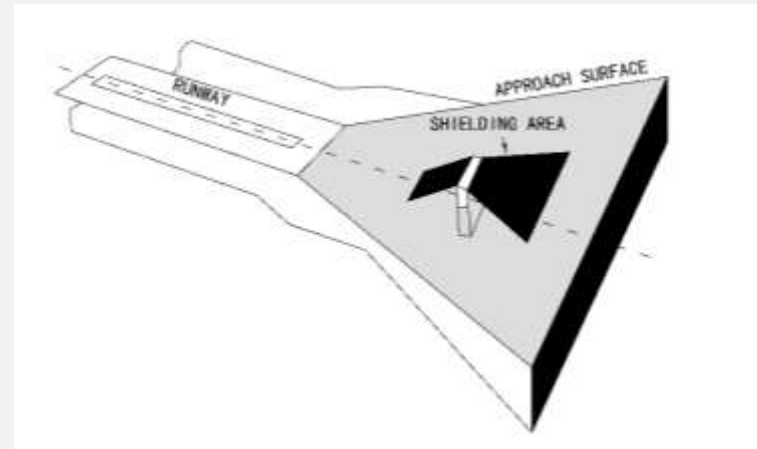
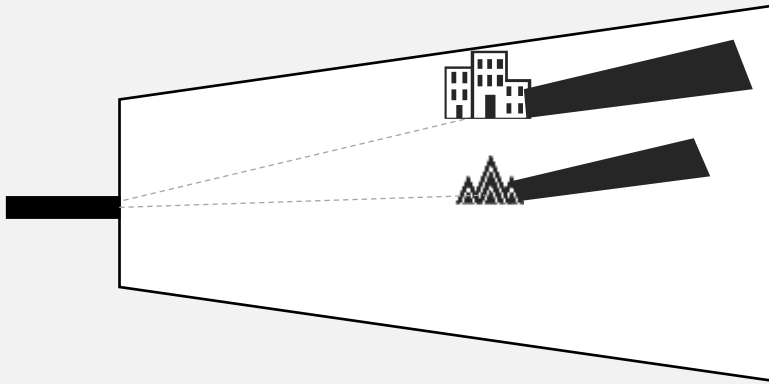
《Guidelines for the application of the principle of obstacle shielding in civil airport clearance》

CAAC –Dec-2022

Application - Take-off Climbing Surface / Approach Surface



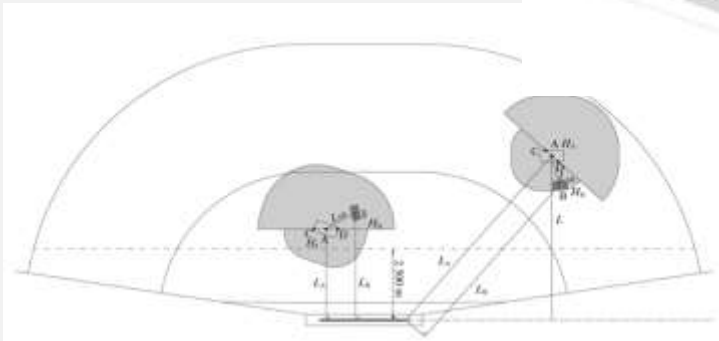
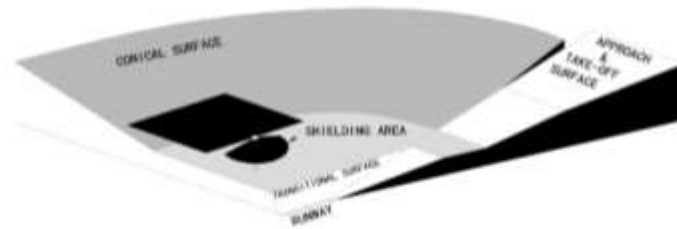
According to the collision risk study, when the diffusion rate of the border of the shielding area is consistent with the diffusion rate of the approach surface or the take-off climbing surface, the collision risk is low, which is conducive to reasonable application. The take-off climbing surface is diffused according to 12.5%, and the approach surface is diffused according to 15%.



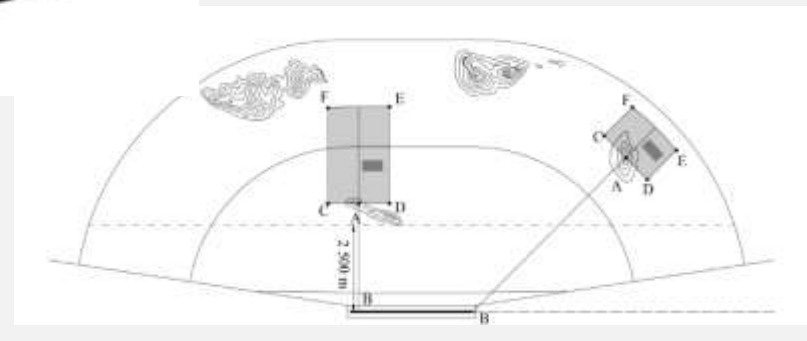
Application - Inner horizontal Surface / Conical Surface



Based on the aeronautical study, obstacle evaluation surface and collision risk value, a boundary line is set with a horizontal projection distance of 2500 meters from the runway median line: Shielding area within 2500 meters, the maximum shielding radius 300 meters. Shielding area beyond 2500 meters, with a maximum shielding radius of 300 meters towards the runway, be away from the runway, which is divided into general areas or mountainous areas: In general areas, with a maximum radius of 600 meters. In mountainous areas, according to the maximum 600 meters and a half wide.

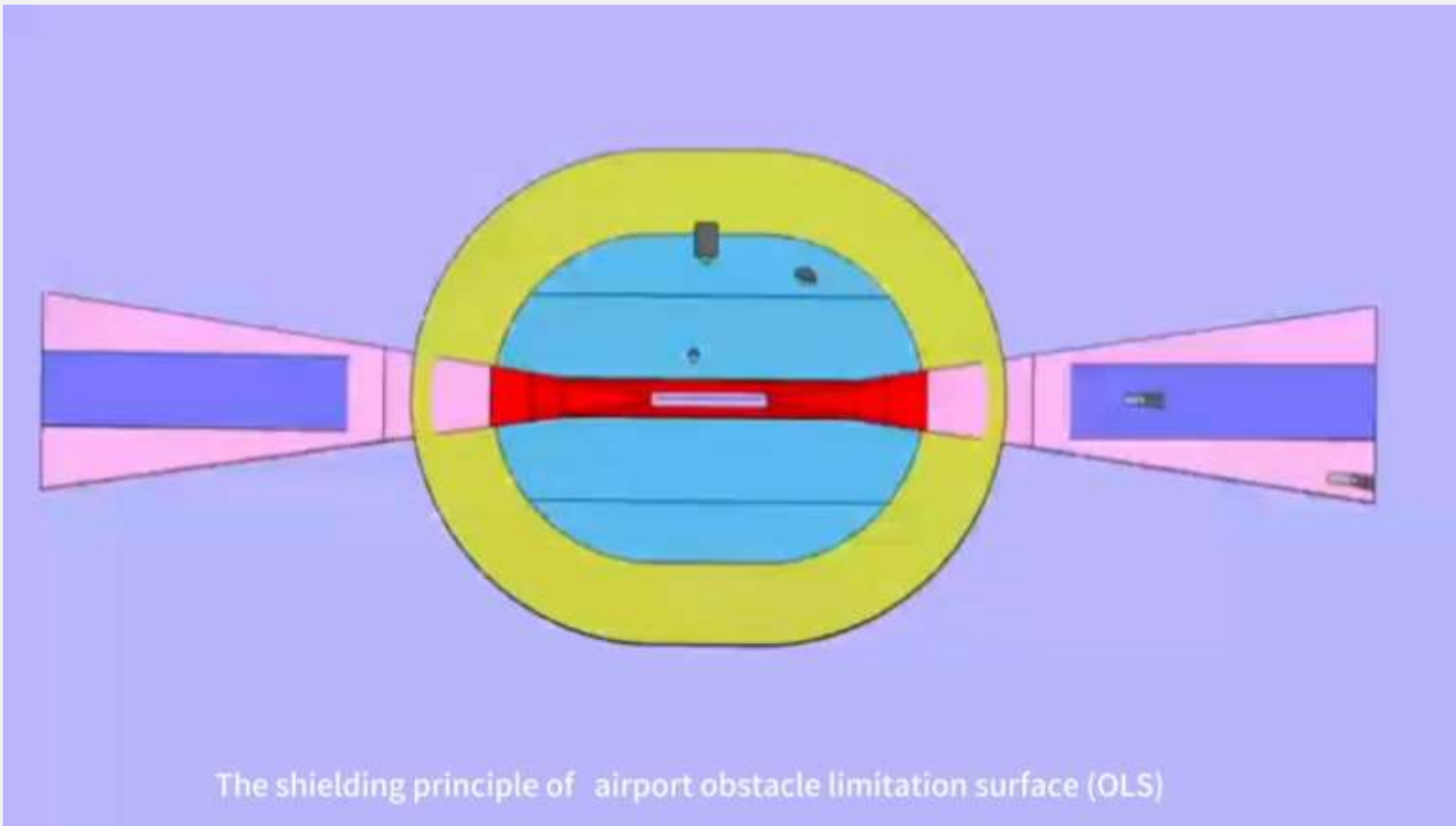


general areas



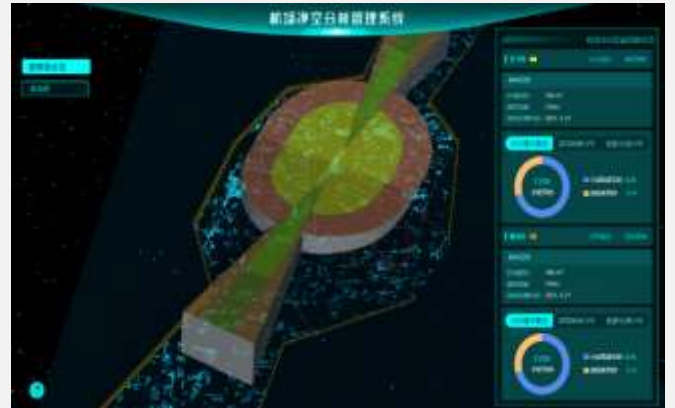
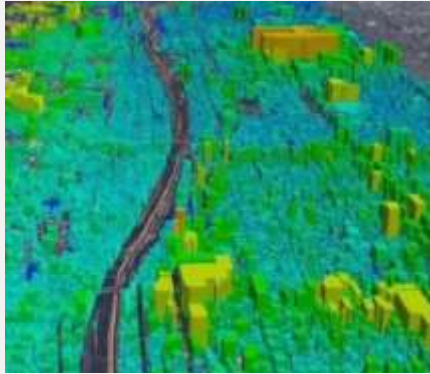
mountainous areas

Shielding Principle for 3D Model Video



The shielding principle of airport obstacle limitation surface (OLS)

Application - Clearance management software



And the other Application, we have developed Clearance management software, which has been applied to Civil Airport Clearance projection and management based on the Shielding Principle.

We wish that the research results of shielding principle will play an important role in the formulation of international standards and the application of shielding in more countries.

3.ACTION BY THE MEETING



The meeting is invited to:



Review the study of shielding area, shielding method and matters that need attention;



Put forward the related opinions and suggestions of shielding principle.



Thank You

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