Obstruction Identification Surfaces (OIS) are hypothetical surfaces above an airport which are established with relation to each runway. The primary function of an OIS is to identify objects that are vertical obstructions around an airfield. This provides the pilot with more control on the altitude when approaching or departing the airfield, and have avoid air traffic accidents.

The goal of this project was to develop a tool to generate the OIS features with two specifications from Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO). Another objective of this project is to store the OIS feature in a globalized and centralized format.

For the FAA, in Federal Aviation Regulation (FAR) part 77, subpart C describes the OIS. The size of each OIS is based on the categorization of each runway according to the type of approach available or planned for that runway. The slope and dimensions of the approach surface applied to each end of a runway are determined by the most precise existing or planned approach for that runway end.

For ICAO, in Annex 15 chapter 10—Electronic Terrain and Obstacle Data (eTOD), also provide the specifications for each OIS in terminal control area (area 2) and divides area 2 into area 2a, 2b, and 2c.

**Obstruction Identification Surfaces in Planimetric View**

- **eTOD OIS Features**
- **FAA OIS Features**

**Geoprocessing Tool (GP)**

In ArcGIS, GP tool is used for the OIS generation. The “Create OIS Features” GP tool provides an intuitive user interface for the user to interact with. The prepopulated parameters allow the user to create OIS features to the desired specification with a single click.

- **Conical Surfaces** extend upward and outward from the outer limits of the Horizontal Surface at a horizontal distance of 4,000 feet. The slope of the conical surface is 20/1 measured in a vertical plane.

- **Transitional Surfaces** extend outward and upward at right angles from the runway centerline and from the sides of the Primary and Approach Surfaces.

- **Primary Surface** is longitudinally centered on a runway. The elevation of any point on the Primary Surface is the same as the elevation of the nearest point on the runway centerline. Primary Surface widths vary with the classification of the runway.

- **Approach Surfaces** are longitudinally centered on the extended centerline of the runway beginning at the end of the Primary Surface and extending outward and upward. Slope and length vary with the classification of the approach type.

Date Source:
- ESRI Aeronautical Solution, ESRI ArcGIS Online,
- FAA FAR Part 77,
- ICAO Annex 15