**PURPOSE**

As part of global air traffic control modernization efforts, the International Civil Aviation Organization (ICAO) requires member states to produce electronic terrain and obstacle data sets (eTOD) for airports by November 2010. These eTOD mandates delineate four coverage areas surrounding airports defined by specific configurations and data quality requirements. Many nation states, especially those with limited resources, are struggling to meet eTOD compliance deadlines. This project presents a user-friendly GIS application to assist the assessment of the quality of existing digital aeronautical data and in the planning for timely eTOD compliance.

**SPECIFICATIONS**

In order to achieve an easy-to-use, economical solution, the project was designed:

- For users with limited GIS experience
- For laptop/desktop computing
- For locally hosted data
- To utilize ArcView 9.3 software with no extensions
- To use standard ArcMap and ArcCatalog interfaces

**DATA**

- File Geodatabase: eTOD_obstacle.gdb
- Obstacles
  - LineObstacle
  - PointObstacle
  - PolygonObstacle
- Coverage_Area
  - ADHP
  - ADHPSurfaceArea
  - ADHPSurfaceLine
  - ADHPTaxiway
  - Airspace
  - Area_Line
  - OA_Naming
  - ObstacleArea
  - Selection Box
  - Territory

The geodatabase was developed to optimize the ease and efficiency of generating the coverage areas. The features represent the minimum set of data required for an eTOD compliant submittal. Each feature incorporates the required eTOD attributes, as well as appropriate relationship classes. This allows the user to begin to organize and format existing and future data for eventual eTOD compliance. The feature dataset assemblies additional features required for creating the coverage areas. These features were intentionally segregated from the eTOD data to allow more user flexibility in assembling this dataset, without jeopardizing the eTOD_obstacle schema.

**IMPLEMENTATION**

The methods and procedures for creating the four eTOD coverage areas, and selecting associated obstacles, were organized into a single ArcToolbox, the eTOD Coverage Area Toolbox. Within the toolbox are toolsets for each coverage area. From these toolsets, the user can access the specific models to generate coverage areas applicable to their specific airport. In addition, the models select the obstacles within the coverage areas in order to assess data quality against eTOD standards. User instructions and help documentation are accessible through the toolbox help commands in ArcMap and ArcCatalog.

**Coverage Area 1**

- Area 1 - Feet
- Coverage Area 1 is represented by the boundary of the entire territory or state. All obstacles above 100m must be collected within this area.

**Coverage Area 2**

- Area 2 – 45km
- Area 2 – TCA
- The user has two options for Coverage Area 2 – a Terminal Control Area (TCA) boundary, or a 45km buffer. For those airports without a TCA, the Area 2 – 45km model is used.

**Coverage Area 3**

- Area 3
- Coverage Area 3 demarcates a buffer space around surface aircraft movement areas. Obstacles must be recorded for areas within 90m either side of a runway centerline, and 50m from taxiway edges.

**Coverage Area 4**

- Area 4
- Coverage Area 4 only applies to airports with certain instrument landing capabilities (CAT II/III). A 900m x 120 m rectangle starting at the runway threshold represents this area.