

**LUAS**

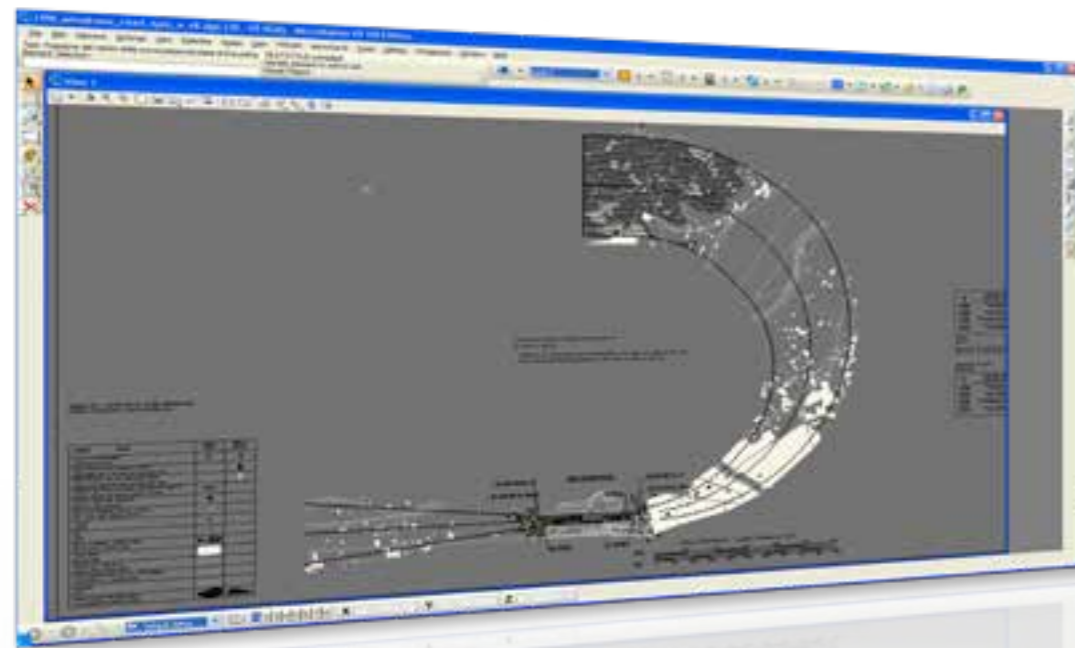
The LUAS is the IDS Air Nav dedicated system for managing the process by which obstacles are planned, notified, surveyed, approved, and published. Obstacle owners who want to build a new obstacle, to change the size of an existing obstacle or to remove existing ones, can send their request using a dedicated and configurable web interface form. Depending on the obstacles impact check, a series of actions will be turned on or off, whereby a dedicated analysis will be undertaken and track the complete process within the LUAS system. This web application lets the user know if their request has an impact on aviation and Aeronautical Regulator approval is needed. The system also allows the user to check the status of their request at any time. When the obstacle owner has sent his request, the system is able to perform the assessment to determine if the planned operation will impact aviation.

**e-TOD Obstacle Chart Builder**

IDS Air Nav's e-TOD Obstacle Chart Builder provides all the necessary tools to extract obstacle and terrain information needed to create obstacle and terrain charts (ICAO type A, B and PATC). It allows the user to manage and define chart templates within a graphical environment and to modify the following parameters:

- Header, profile view and plan view size and position;
- Size and position of boxes;
- Text size, color and font for each box element;
- Elements to be represented.

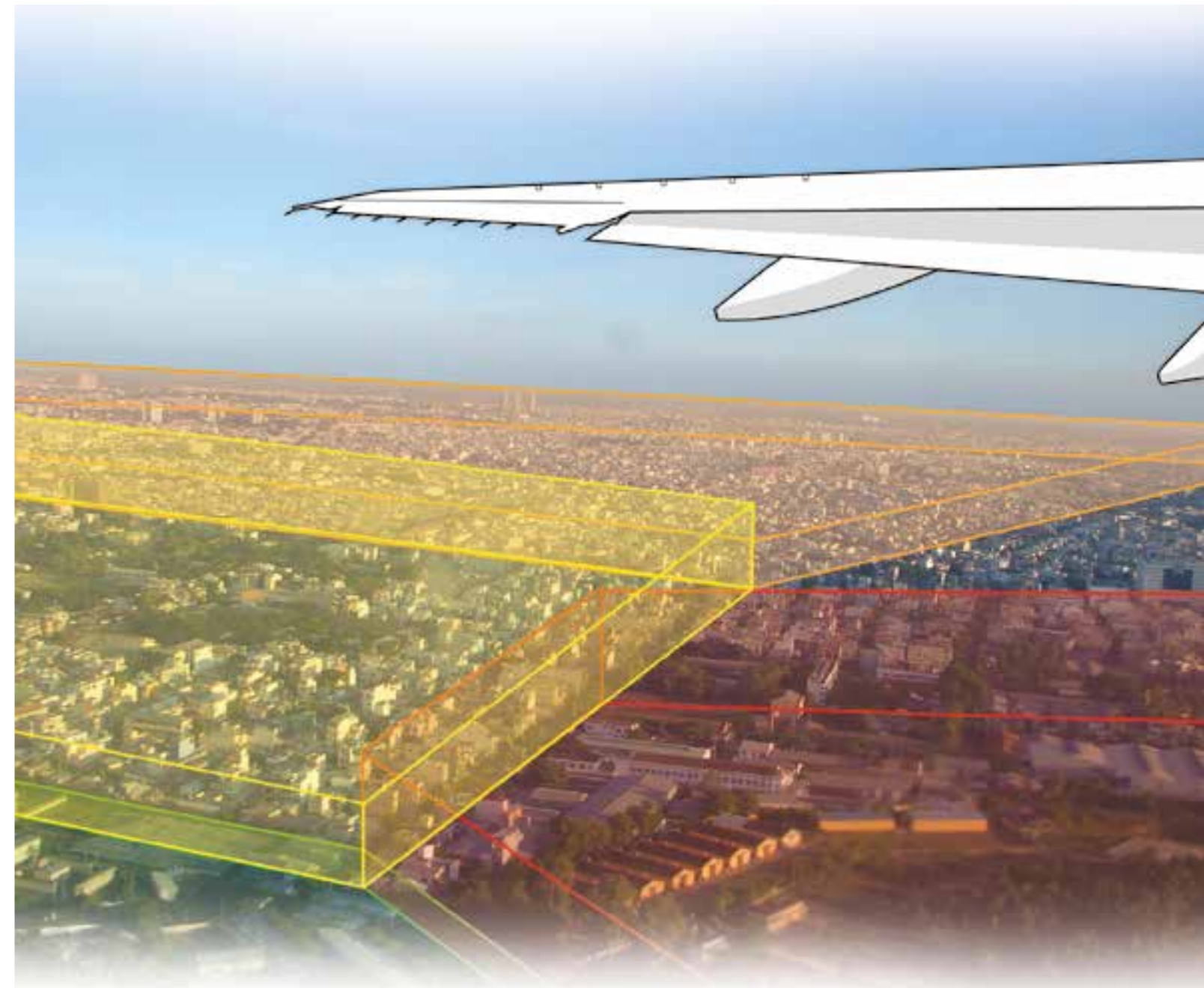
Once created, charts can then be inserted into the central database from where any system user can later retrieve them using a number of different search criteria (e.g. date of issue, classification, ICAO code, etc.) and then display them with a single click.



Sample Obstacle Chart

# Airport and Terrain Obstacle Management

e-TOD Electronic Terrain and Obstacle Database



## Electronic Terrain and Obstacle Database

IDS Air Nav's e-TOD suite of software tools is designed to manage airport, terrain and obstacle data ensuring compliance with international data quality requirements (ICAO Annex 15 up to the latest amendments, European ADQ regulation, etc).

The main functionalities include data administration, reporting and processing, making all elements available for modeling airport areas and ICAO obstacle chart construction and delivery.

The Terrain and Obstacle Database (TOD) and the Airport Mapping Data Base (AMDB) are able to support all activities and provide a common basis either to perform aeronautical charting or to design airspace and flight procedures within the IDS Air Nav FPDAM interactive environment.

e-TOD is composed of four products:

- e-TOD Data Manager;
- e-TOD Airport Data Analyzer;
- e-TOD Obstacle Chart Builder;
- Land Use Assessment System (LUAS).

These can be used with IDS Air Nav's Aeronautical Information Services system either individually or in combination.

## e-TOD Data Manager

IDS Air Nav's e-TOD Data Manager provides all the necessary tools to import, integrate, manage and deliver aerodrome mapping information, obstacle data and terrain data in accordance with ICAO Doc 9881 and ICAO Annex 15 up to Amendment 36.

The system is able to assist the user in managing the lifecycle of data, validating and detecting ambiguous and conflicting data as well as supporting data export and reporting.

The e-TOD Data Manager is able to import and validate several different types of data:

- Digital terrain models (DTM, DSM, DEM);
- Orthophotos and raster files (tiff, Geotiff, ecw, etc);
- Three-dimensional vector maps (dgn, shp, etc);
- Raw data lists containing aerodrome and nav aids information;
- Generic ASCII;
- AIXM.

Data originating from raw data lists will be mapped into the AIXM data model. The system has the capability to add default values to the file for any missing AIXM/ICAO attributes.

All data will undergo several validation checks during importation with a Cyclic Redundancy Check (CRC) code is generated to ensure data integrity. The data is provided with meta-data as required by ICAO Annex 15 and is then presented to the user via a graphical front end. All data and metadata are editable and the system maintains data consistency in the case of concurrent revisioning. Data can be displayed in a 2D or 3D GIS environment or in Google Earth.

## e-TOD Airport Data Analyzer

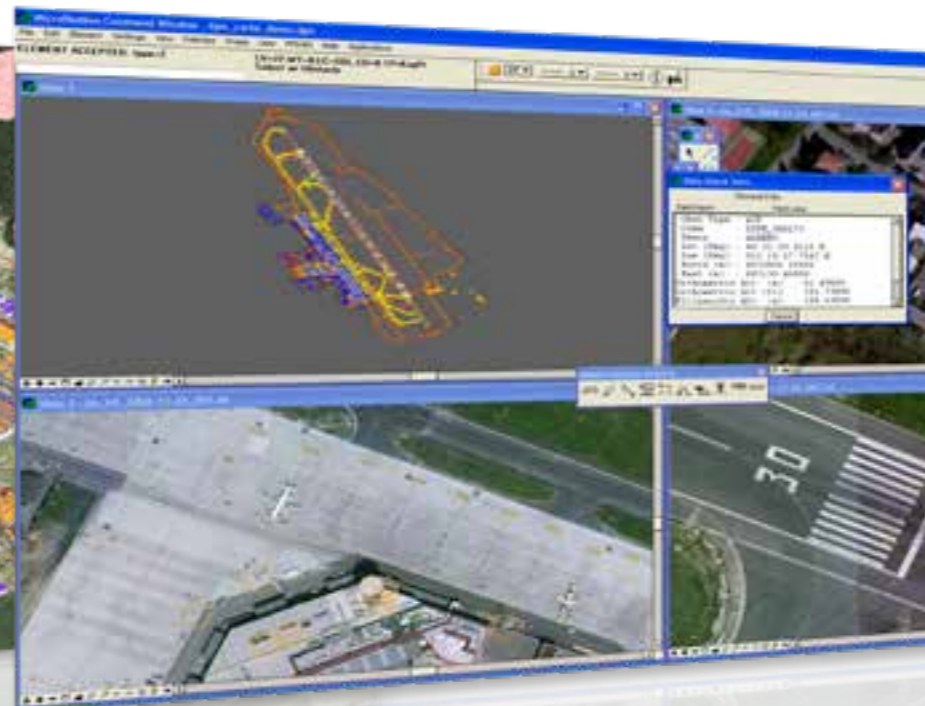
IDS Air Nav's e-TOD Airport Data Analyzer (ADA) provides all the tools necessary to import the airport, obstacle and terrain data needed to reproduce the airport environment and perform natural or human made obstacle assessments.

Based on a GIS/CAD platform, ADA allows the user to load airport data including runways, helipads, taxiways, aprons, vertical structures, construction areas, survey control points, nav aids, obstacles and terrain data in order to support activities such as impact analysis of airport infrastructures changes, obstacle limiting surface (OLS) design or natural & artificial obstacle assessment.

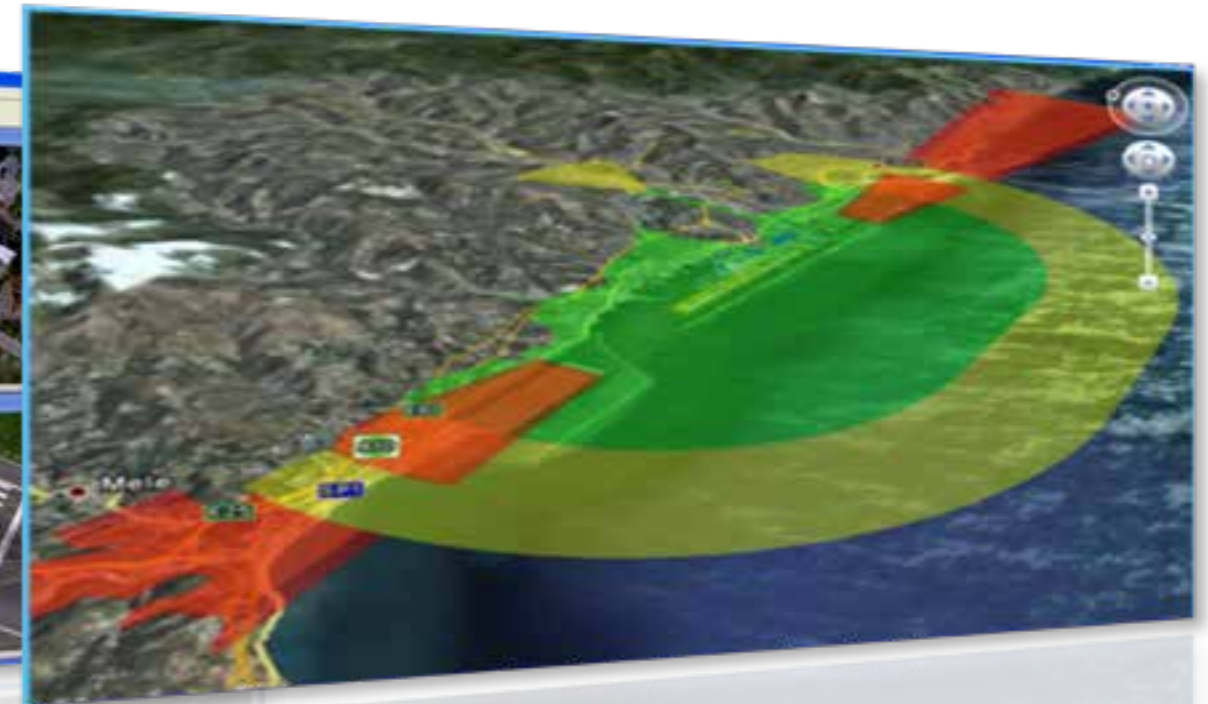
ADA supports the design of Annex 4 &14 surfaces and the newest set of surfaces detailed in ICAO Annex 15, dedicated to obstacle collection.



Google Map export results



e-TOD Data Manager



Airport Surface Design