An integrated system to acquire, validate and manage airport, terrain and obstacle data in accordance with ICAO Annex 15.
IDS’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, Amendments 33, 34 and 36).

Its 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 FPDAM interactive environment.

e-TOD is composed of four products:

- e-TOD Data Manager
- e-TOD Airport Data Analyzer
- e-TOD Obstacle Chart Builder
- e-TOD Obstacle Permission Manager

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

**e-TOD Data Manager**

IDS’s e-TOD Data Manager provides all the necessary tools to import, integrate, manage and deliver aerodrome mapping information, obstacle 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 several different types of data:

- Digital terrain models (DTM, DSM)
- Orthophotos
- Raster files
- Three-dimensional vector maps
- Raw data lists

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 undergo several validation checks during importation, a Cyclic Redundancy Check (CRC) code is computed to ensure data integrity, data are provided with metadata as required by ICAO Annex 15 and are 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’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 assessment.

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, navaids, obstacles and terrain data in order to support activities such as impact analysis of airport infrastructures changes, obstacle limiting surface 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.

**e-TOD Obstacle Chart Builder**

IDS’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.