

Airborne Laser Scanning for Airport Terrain and Obstacle Mapping Limited Feasibility Study

2005 - 2006

Problem:

Amendment 33 to ICAO annex 15 introduces new requirements for the domain of aeronautical information. Amongst others is this to establish a digital obstacle database (with a refined definition of obstacles) as well as a digital terrain database. For different areas there are different precisions required which are to be realised in two stages (until 2008/2011).

The goal of this limited feasibility study was to evaluate the suitability of Airborne Laser Scanning (ALS) as a technique for terrain and obstacle collection according to ICAO Annex 15, Amendment 33, with regard to Areas 2 and 3. Hence, the study will focus on:

- data collection
- obstacle extraction (detection and classification)
- comparison of this technology with photogrammetric stereo restitution.

The study concentrates mainly on answering technical questions. The problems met during the elaboration of the study listed as questions as a first conclusion drawn from the experience of this limited study.

The study was elaborated in a consortium together with skyguide and swissphoto.

Services:

Tasks of ITV Geomatik AG:

- General project management covering organizational, financial and technical controlling
- Define quality aspects to be met when processing obstacle and terrain data
- Work out recommendations for future solutions



Benefit:

The study shows the assets and drawbacks of ALS and that it is appropriate technique for the collection of terrain and obstacle. With the results of this study EUROCONTROL is able to decide if this technique is appropriate for terrain and obstacle collection according to ICAO Annex 15 and if it should be used for the future to substitute photogrammetric stereo restitution.