

# Post-mission Adjustment Methods of Airborne Laser Scanning Data

Kris MORIN, USA and Dr. Naser EL-SHEIMY, Canada

**Key words:** ALS, LIDAR, adjustment, calibration, laser scanner.

## ABSTRACT

Airborne Laser Scanners (ALS) offer high speed, high accuracy and quick deployment in the field. These attributes have contributed to their growing use. To date however, there has been a lack of common calibration methods; especially on the commercial market. Users are often left to develop their own methods which is time consuming and labour intensive. This paper reviews the effects of miscalibration on the derived terrain data, covers current methods of calibration and suggests a new adjustment model that allows for the parameterization of ALS scanner errors. Using data from a Leica Geosystems ALS40, the results of the new adjustment model show that a calibration solution can be obtained without the need of surveyed ground control points. Other results indicate that tie point selection is an important factor on the quality and consistency of the calibration model.

## CONTACT

Kris Morin, Geomatics Engineer  
Leica Geosystems  
10965 Via Frontera  
San Diego, CA 92128  
USA  
Tel. +1 858 675 3335  
Fax + 1 858 675 3345  
E-mail: morin@lh-systems.com  
Web site: <http://www.lh-systems.com>

Dr. Naser El-Sheimy, Chair FIG Commission 5 WG 3  
Department of Geomatics Engineering  
The University of Calgary, Canada  
2500 University Drive N.W.  
Calgary, AB  
T2N 1N4, CANADA  
Tel. + 1 403 220 7587  
Fax + 1 403 284 1980,  
E-mail: naser@Geomatics.ucalgary.ca  
Web site: <http://www.geomatics.ucalgary.ca/~nel-shei/>