RADIOMETRIC CALIBRATION FOR DIGITAL AERIAL MAPPING CAMERAS

K. Neumann[*a]

[a] Z/I Imaging, Product Management, Ziegelstrasse 12, 73431, Aalen, Germany

Technical Commission VII Symposium 2010

KEY WORDS: Calibration, Radiometry, Vegetation, Forestry, Radiometry, Multispectral, Acquisition, Aerial

ABSTRACT:

The use of aerial images for remote sensing applications as an alternative to satellite data increased with the introduction of digital aerial cameras. Some of these systems like the DMC and RMK D from Z/I Imaging have multispectral capabilities and collect R,G,B and NIR image data simultaneously. Because these cameras have primarily been developed for mapping applications, the remote sensing community is not fully aware about the capabilities and benefits of these sensors. This presentation shows examples for remote sensing applications from users worldwide, where digital aerial images collected with the DMC had been used for vegetation classification, change detection and agriculture monitoring. A prerequisite to use aerial images successfully for remote sensing projects is a good radiometric camera calibration, ideally an absolute radiometric calibration. Therefore a new radiometric calibration process had been developed at Z/I Imaging and implemented into production for the DMC and the ne w RMK D digital camera systems. This process will enable the DMC and RMK D to produce radiometrically calibrated imagery with an absolute accuracy comparable to satellite sensors. During this presentation the radiometric calibration process and the tools used for calibration will be described.

TOPIC: Multi-spectral and hyperspectral remote sensing
ALTERNATIVE TOPIC: Remote sensing applications