Calibration of the Digital Modular Camera

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ABSTRACT

At this moment, airborne digital cameras based on different technical concepts are under development. In view of the high geometric accuracy requirements in photogrammetry, Z/I-Imaging focused its design and development of the DMC on a matrix-based CCD sensor. The DMC uses a modular design to achieve high geometrical resolution together with multispectral capabilities. It comprises eight synchronously operating CCD-array cameras. Four parallel cameras can generate multi-spectral R,G,B and Near Infrared imagery for the acquisition of color composites. Four panchromatic images from converging cameras, are mosaicked digitally to form a single high resolution image. The quality and accuracy of this composed virtual image is based on the validity of the DMC platform calibration. The paper will describe the post-processing steps of DMC image data to generate virtual central perspective images. Additionally, this paper will give an overview of the entire DMC calibration as the basis to integrate DMC imagery into existing photogrammetric workstations. Finally, it discusses the potential of digital imagery based on first DMC flight results.

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