Editorial
„High Resolution Mapping from Space"

dedicated to Gottfried Konecny on the occasion of his 75ᵗʰ birthday

Earth imaging from air and space have undergone major changes over the last years. New and significant developments comprise the advent of digital aerial cameras, of high resolution, hyper-spectral satellite imagery, laser scanning and SAR/InSAR data. Today, all these data are used for the production, refinement, and update of geospatial information. At the same time updating existing geospatial databases has gained more importance, while automation and the worldwide web have had a significant impact on the photogrammetric and remote sensing processing chain.

These developments have formed the background for the ISPRS Hannover Workshop *High Resolution Earth Imaging for Geospatial Information* which was held at the Institute of Photogrammetry and GeoInformation (IPI), University of Hannover between May 17 and 20, 2005 (see also the workshop report by Peter Reinartz in this issue). Just as this theme issue, the workshop was dedicated to Prof. Gottfried Konecny at the occasion of his 75ᵗʰ birthday. Gottfried Konecny is not only one of the most well known and most respected scientists in photogrammetry and remote sensing on a worldwide scale, to this very day he is also a tireless and very successful advocator of international cooperation and friendship.

This special issue contains updated versions of those workshop papers dealing with high resolution mapping from space. We intentionally left out some excellent articles of aerial sensors and applications in order to sharpen the focus of this issue. In the spirit of Gottfried Konecny all articles including this editorial are written in English, because only in this way, the material becomes accessible to the international community.

The first paper by *Manfred Schroeder* gives a short overview of Gottfried Konecny's achievements in the last 25 years. Starting from the Metric Camera, Konecny and his institute have been involved in nearly all European space mapping missions. Konecny is also a great enthusiast of mountains, which is why for his birthday he was presented a remote sensing movie of the Nanga Parbat. In the second paper, *Michael Eineder* describes how the underlying digital terrain model was derived from data of the Shuttle Radar Topography Mission. He presents results from a probability-based iterative algorithm he developed, which is capable of fusing multi-frequency interferograms.

The next paper, written by *Karsten Jacobsen*, gives an overview of existing and planed space missions for mapping applications. It is pointed out that in the past space technology used to be a technique only for a very limited number of countries, while in the near future there will be approximately a dozen countries operating satellites with a ground sample distance of 2.5 m and below. The consequences of such a major shift are only beginning to show. In their paper, *Emmanuel Baltsavias et al.* describe different approaches for sensor modeling of IKONOS triplet images of very difficult, mountainous terrain, including in-flight calibration. They also present an algorithm for automatic DEM generation, and report accuracies in the range of one pixel (equivalent to 1 m) for point determination, and a little more for DEM generation.

The paper by *Michele Crosetto et al.* reviews the determination of land deformation using differential interferometric synthetic aperture radar (D-InSAR) from space. The authors concisely describe the basic steps and possible applications of D-InSAR; when multiple images of the same area are available, followed by some convincing results. Finally, the paper by *Timothée Bailloeul et al.* deals with a novel approach for building refinement from Quickbird images combined with GIS information. Starting at the building location given

through the GIS, active contour models (snakes) are initialised to determine the building extent in the images. A coarse DEM can be used to further improve the results.

A few words of thanks at the end: we are very grateful to all IPI staff for their invaluable help in organizing the workshop, to the workshop participants who have made the meeting a success, and to the authors of this special issue for making available their excellent papers, and for keeping a tough timeline. Last not least, we would like to thank the PFG editor-in chief and his team for allowing us to publish this special issue and for all the help they extended to us in the technical preparation.

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