IN-STRIP MATCHING AND RECONSTRUCTION OF LINE SEGMENTS FROM UHR AERIAL IMAGE TRIPLETS

A.Ö. Ok¹, J.D. Wegner², C. Heipke², F. Rottensteiner², U. Soergel², Vedat Toprak¹

¹ Dept. of Geodetic and Geographic Information Tech., Middle East Technical University, 06531 Ankara, Turkey –

(oozgun, toprak)@metu.edu.tr

² Institute of Photogrammetry and Geoinformation, University of Hannover, 30167 Hannover, Germany – (wegner, heipke, rottensteiner, soergel)@ipi.uni-hannover.de

Working Groups I/2, III/1, III/4, III/5

KEY WORDS: three-view matching, in-strip line matching, reconstruction, aerial images, pair-wise matching

ABSTRACT:

In this study, we propose a new line matching and reconstruction methodology for aerial image triplets that are acquired within a single strip. The newly developed stereo reconstruction approach gives us better line predictions in the third image which in turn helps to improve the performance of the matching. The redundancy information generated in each stereo match gives us ability to reduce the number of false matches while preserving high levels of matching completeness. The approach is tested over four test patches and produced highly promising line matching and reconstruction results.

This contribution was selected in a double blind review process to be published within the *Lecture Notes in Computer Science* series (Springer-Verlag, Heidelberg).

Photogrammetric Image Analysis

Volume Editors:	Stilla U, Rottensteiner F, Mayer H, Jutzi B, Butenuth M
LNCS Volume:	6952
Series Editors:	Hutchison D, Kanade T, Kittler J, Kleinberg JM, Kobsa A, Mattern F, Mitchell JC, Naor M, Nierstrasz O, Pandu Rangan C, Steffen B, Sudan M, Terzopoulos D, Tygar D, Weikum G
ISSN:	0302-9743

The article is accessible online through www.springerlink.com.