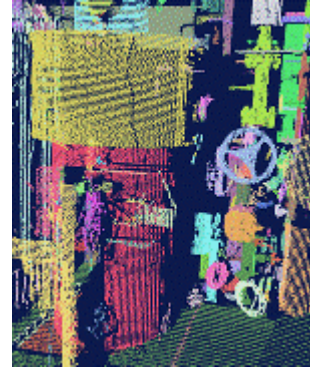
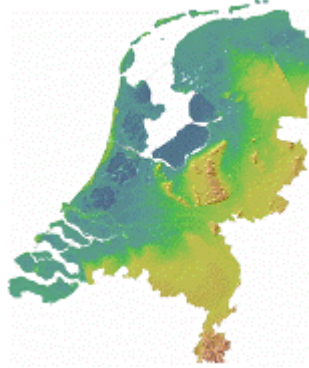
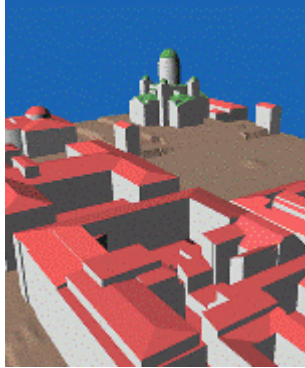


ISPRS workshop Laser scanning 2005

ITC, Enschede, the Netherlands
September 12-14, 2005



Organised by:

ISPRS WG III/3 Processing of point clouds from laser scanners and other sensors
ISPRS WG III/4 Automatic image interpretation for 3D city modelling
ISPRS WG V/3 Terrestrial laser scanning
International Institute for Geo-Information Science and Earth Observation (ITC)

Sunday, September 11

19:00 Registration and welcome drink
21:00 End

Tuesday, September 13

9:00 Session 4: Point cloud segmentation
10:40 Coffee break
11:10 Session 5: Vegetation analysis I
12:25 Lunch break
13:45 Company presentations
14:15 Session 6: Waveform analysis
15:05 Tea break
15:35 Session 7: Poster session
17:15 End

19:00 Workshop dinner

Monday, September 12

9:00 Registration
10:30 Opening
10:45 Session 1: Sensor analysis
12:25 Lunch break
13:45 Company presentations
14:15 Session 2: Change detection
15:05 Tea break
15:35 Session 3: Digital terrain models
17:15 End

17.30 Reception

Wednesday, September 14

9:00 Session 8: Registration
10:40 Coffee break
11:10 Session 9: Vegetation analysis II
12:00 Lunch break
13:15 Session 10: Building reconstruction
14:55 Closing
15:10 End

Opening session

Monday, September 12, 10:30 - 10:45

Chair: G. Vosselman, the Netherlands

M. Molenaar, Rector ITC

H.-G. Maas, President ISPRS Technical Commission V

Session 1: Sensor analysis

Monday, September 12, 10:45 - 12:25

Chair: N. Pfeifer, the Netherlands

Assessment of sensor characteristics of an airborne laser scanner using geometric reference targets

L. Wotruba, F. Morsdorf, E. Meier, D. Nüesch, Switzerland

A framework for position uncertainty of unorganised three-dimensional point clouds from near-monostatic laser scanners using covariance analysis

K.-H. Bae, D. Belton, D.D. Lichti, Australia

Laboratory calibration of backscattered intensity for laser scanning land targets

S. Kaasalainen, J. Hyypä, T. Mielonen, Finland

Integrated laser scanner and intensity image calibration and accuracy assessment

J. Amiri Parian, A. Gruen, Switzerland

Company presentations

Monday, September 12, 13:45 - 14:15

Fugro-Inpark

L. Amoureux, the Netherlands

Riegl

N. Studnicka, Austria

Terra digital

D. Silbermann, Germany

Terralmaing

J.W. van der Vegt, the Netherlands

TerraSolid

T. Steffansson, Finland

Session 2: Change detection

Monday, September 12, 14:15 - 15:05

Chair: D. Lichti, Australia

Accuracy analysis of the Leica HDS3000 and feasibility of tunnel deformation monitoring

R. Lindenbergh, N. Pfeifer, T. Rabbani, the Netherlands

Change detection on point cloud data acquired with a ground laser scanner

D. Girardeau-Montaut, M. Roux, R. Marc, G. Thibault, France

Session 3: Digital elevation models
Monday, September 12, 15:35 - 17:15
Chair: T. Voegtle, Germany

Automated extraction of pair wise structure lines using airborne laserscanner data in coastal areas

A. Brzank, P. Lohmann, C. Heipke, Germany

3D mapping of Switzerland - Challenges and experiences

J. Luethy, R. Stengele, Switzerland

Laser DTM generation for South-Tyrol and 3D-visualization

R. Wack, H. Stelzl, Austria

Dense DTM generalization aided by roads extracted from LiDAR data

N. Abo Akel, K. Kremeike, S. Filin, M. Sester, Y. Doytsher, Israel / Germany

Session 4: Point cloud segmentation
Tuesday, September 13, 9:00 - 10:40
Chair: F. Rottensteiner, Austria

Efficient Hough transform for automatic detection of cylinders in point clouds

T. Rabbani, F. van den Heuvel, the Netherlands

Filtering of airborne laser scanner data based on segmented point clouds

G. Sithole, G. Vosselman, the Netherlands

Hybrid image segmentation using LiDAR 3D planar primitives

F. Bretar, M. Roux, France

Segmentation based robust interpolation – a new approach to laser data filtering

D. Tóvári, N. Pfeifer, Germany / the Netherlands

Session 5: Vegetation analysis I
Tuesday, September 13, 11:10 - 12:25
Chair: F. Morsdorf, Switzerland

Factors affecting the quality of DTM generation in forested areas

H. Hyyppä, X. Yu, J. Hyyppä, H. Kaartinen, S. Kaasalainen, E. Honkavaara, P. Rönholm, Finland

Quantitative mapping of hydrodynamic vegetation density of floodplain forest using airborne laser scanning

M.W. Straatsma, the Netherlands

Applicability of first pulse derived digital terrain models for boreal forest zone

X. Yu, H. Hyyppä, H. Kaartinen, J. Hyyppä, E. Ahokas, S. Kaasalainen, Finland

Company presentations

Tuesday, September 13, 13:45 - 14:15

TopoSys

K. Schnadt, Germany

TopScan

J. Lindenberger, Germany

Trimble

D. Hadden, United Kingdom

Zoller+Fröhlich

J. Meixner, Germany

Session 6: Waveform analysis

Tuesday, September 13, 14:15 - 15:05

Chair: H.-G. Maas, Germany

Visualization and analysis of full-waveform airborne laser scanner data

Å. Persson, U. Söderman, J. Töpel, S. Ahlberg, Sweden

Sub-pixel edge localization based on laser waveform analysis

B. Jutzi, J. Neulist, U. Stilla, Germany

Session 7: Poster session

Tuesday, September 13, 15:35 - 17:15

Optimization of the scanning angle for countrywide laser scanning

E. Ahokas, X. Yu, J. Oksanen, J. Hyyppä, H. Kaartinen, H. Hyyppä, Finland

A morphological reconstruction algorithm for separating off-terrain points from terrain points in laser scanning data

H. Arefi, M. Hahn, Germany

Maintaining momentum in terrestrial laser scanning: A UK case study

D.M. Barber, J.P. Mills, P.G. Bryan, United Kingdom

A segmentation procedure of LiDAR data by applying mixed parametric and nonparametric models

F. Crosilla, D. Visintini, F. Sepic, Italy

On the use of airborne laser scanning data to verify and enrich road network features

C. Hatger, Germany

Using individual tree crown approach for forest volume extraction with aerial images and laser point clouds

J. Hyyppä, T. Mielonen, H. Hyyppä, M. Maltamo, X. Yu, E. Honkavaara, H. Kaartinen, Finland

Height texture of low vegetation in airborne laser scanner data and its potential for DTM correction

B.G.H. Gorte, N. Pfeifer, S. Oude Elberink, the Netherlands

Feasibility and problems of TLS in modeling rock faces for hazard mapping
M. Alba, L. Longoni, M. Papini, F. Roncoroni, M. Scaioni, Italy

Extraction of planar patches from point clouds to retrieve dip and dip direction of rock discontinuities
R. Roncella, G. Forlani, Italy

Effects of LiDAR DEM resolution in flood modelling: A model sensitivity study for the city of Tegucigalpa, Honduras
A. Tamiru Haile, T.H.M. Rientjes, Ethiopia / the Netherlands

Session 8: Registration

Wednesday, September 14, 9:00 - 10:40

Chair: C. Brenner, Germany

Automatic tie elements detection for laser scanner strip adjustment
N. Pfeifer, S. Oude Elberink, S. Filin, the Netherlands / Israel

Extended Gaussian images for the registration of terrestrial scan data
C. Dold, Germany

Fast correspondence search for 3D surface matching
D. Akca, A. Gruen, Switzerland

Efficient integration of aerial and terrestrial laser data for virtual city modeling using lasermaps
J. Böhm, N. Haala, Germany

Session 9: Vegetation analysis II

Wednesday, September 14, 11:10 - 12:00

Chair: J. Hyypä, Finland

The potential of discrete return, small footprint airborne laser scanning data for vegetation density estimation
F. Morsdorf, B. Koetz, E. Meier, K.I. Itten, B. Allgöwer, Switzerland

Measuring the growth of individual trees using multi-temporal airborne laser scanning point clouds
X. Yu, J. Hyypä, H. Kaartinen, H. Hyypä, M. Maltamo, P. Rönholm, Finland

Session 10: Building reconstruction
Wednesday, September 14, 13:15 - 14:55
Chair: G. Vosselman, the Netherlands

3D building model generation from airborne laserscanner data using 2D GIS data and orthogonal point cloud projections
E. Schwalbe, H.-G. Maas, F. Seidel, Germany

Airborne laserscanning data for determination of suitable areas for photovoltaics
T. Voegtle, E. Steinle, D. Tóvári, Germany

Automated delineation of roof planes from LiDAR data
F. Rottensteiner, J. Trinder, S. Clode, K. Kubik, Austria / Australia

Accuracy of 3D city models: EuroSDR comparison
H. Kaartinen, J. Hyypä, E. Gülch, G. Vosselman, H. Hyypä, L. Matikainen, A.D. Hofmann, U. Mäder, Å. Persson, U. Söderman, M. Elmqvist, A. Ruiz, M. Dragoja, D. Flamanc, G. Maillet, T. Kersten, J. Carl, R. Hau, E. Wild, L. Frederiksen, J. Holmgaard, K. Vester, Finland / Germany / the Netherlands / Switzerland / Sweden / Spain / France / Denmark

Closing session
Wednesday, September 14, 14:55 - 15:10