

ISPRS WG V/3 Terrestrial Laser scanning and 3D Imaging

2009 Annual Report

A. State of Science and Technology of Working Group Topics

The terms of reference of this working group for the next period (2008-2012) will address current and emerging trends in this field. As exemplified by the special session in Beijing, geometric and radiometric sensor modelling and calibration are gaining interest as recognition of the importance of geometric calibration increases and as the desire for greater exploitation of the radiometric intensity attribute grows. Using the 2008 ISPRS Journal theme issue on TLS (see below) as a good indicator, point cloud registration is arguably the most researched topic TLS topic at present. Continued efforts are anticipated to further improve the automation and robustness of registration. Feature extraction, 3D object modelling and scene classification are also important ongoing areas of research activity. Activity in the integration of terrestrial laser scanning with other sensors on static and kinematic platforms, as in the case of mobile mapping systems, is expected to increase as well. Finally, the scope of this working group will be increased to include other 3D imaging systems, particularly range cameras in recognition of their great potential. Thus, this working group will also be concerned with the development of processing methods for range cameras and other 3D imaging sensors in collaboration with other working groups.

B. Accomplishments of the Working Group

The working group is in its early days but so far has attracted 38 members.

C. Working Group News

Several WG events have been planned. The first will be the next laser scanning workshop to be held in September 2009 in Paris, France. It will be led by WG III/2 with participation by WGs I/2, VII/7 and V/3. The second will be the *3D Image Sensor Technology and Processing* workshop planned for November 2009 in Berlin, Germany. A joint workshop on laser scanning is tentatively planned for Calgary, Canada in 2011. It will be led by WG V/3 with the involvement of WGs I/2, III/2 and VII/7. Co-operation with ICWG V/I is also planned for organising workshops on mobile mapping.

Other plans include

- Cooperation with WG VII/7 and III/2 on waveform reconstruction in TLS and III/1 on pose estimation and surface reconstruction;
- Make the website a much more comprehensive information resource in an effort to attract more active WG members from outside ISPRS;
- Closer links with FIG/IAG through the second Co-Chair in an effort to attract new WG members from those organisations who work in TLS, particularly deformation for measurement; and
- Cooperation with WG V/2 on data formats for cultural heritage archiving

Derek Lichti
Chair, ISPRS WG V/3