



# ***ISPRS Contributions to 3D Digital Landscape Models***

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# *Contents*



- ISPRS
- WG Activities
  - 3D data structures,
  - Virtual Globes and Context-Aware Visualisation;
  - use of lidar data;
  - mobile mapping and standards.
- ISPRS on-line terrestrial laser scanning bibliography;
- Other issues

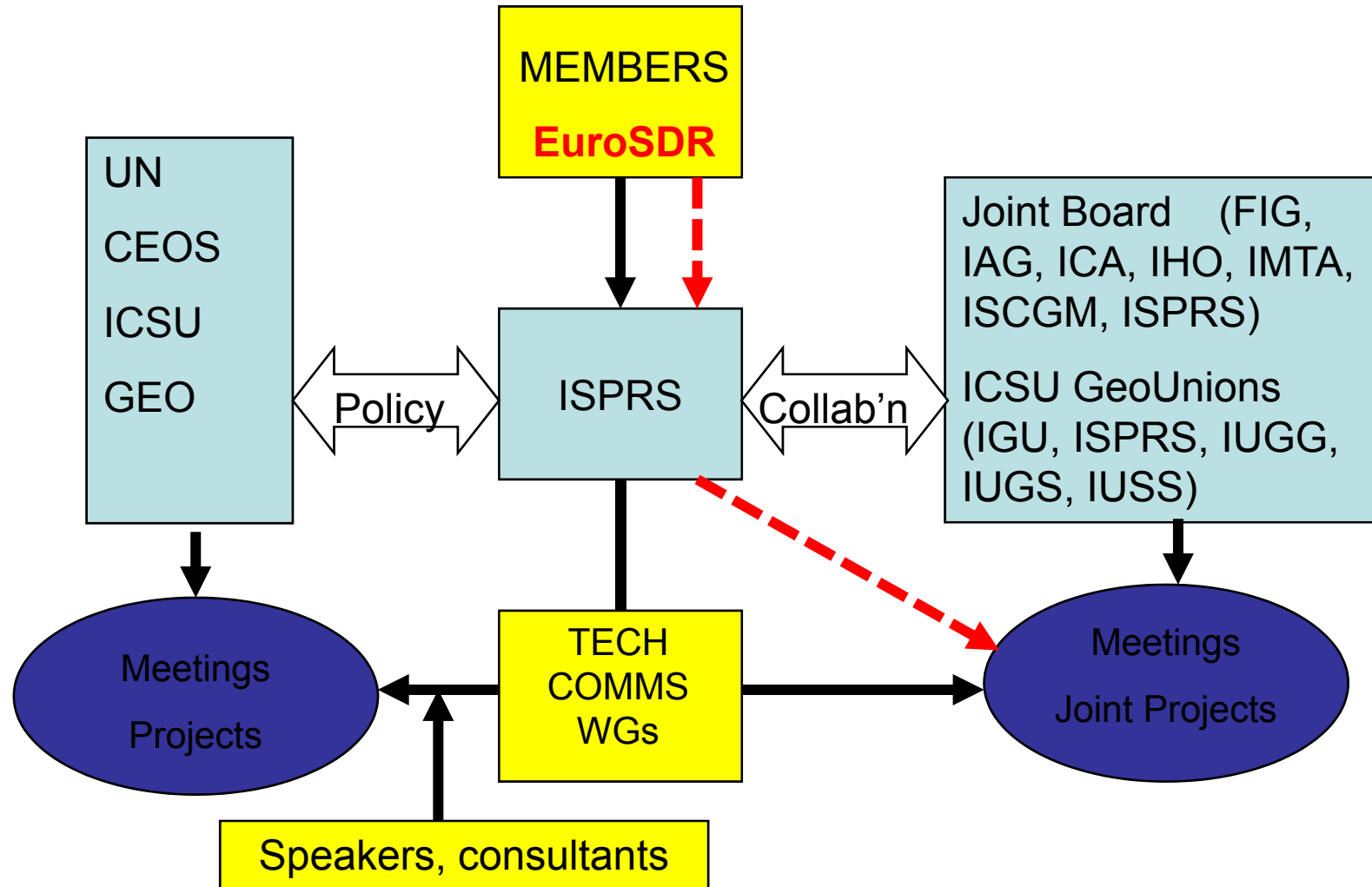
# ***Mission of ISPRS***



ISPRS is an international NGO devoted to the development of international cooperation for the advancement of knowledge, research, development and education in the Photogrammetry, Remote Sensing and Spatial Information Science, their integration and applications, to contribute to the well being of humanity and the sustainability of the environment.

[www.isprs.org](http://www.isprs.org)

# ISPRS – structure and links



# ***ISPRS Working Groups***



- 3D data structures;
- Virtual Globes and Context-Aware Visualisation;
- Use of lidar data;
- Mobile mapping;
- Standards.

[www.isprs.org](http://www.isprs.org)

# ***TLS Bibliography***



**WG V/3 - Terrestrial Laser Scanning and 3D Imaging**  
***Derek Lichti, Hans-Gerd Maas, Marco Scaioni, Pedro Arias-Sánchez.***

Home Page: [www.commission5.isprs.org/wg3/](http://www.commission5.isprs.org/wg3/)

- The aim of this project is to elevate the international profile of the ISPRS in terms of terrestrial laser scanning (TLS) and 3d imaging research by compiling an authoritative, on-line bibliography on TLS.
- It is anticipated that this would help to attract new scientists to Working Group (WG) V/3, Terrestrial Laser Scanning and 3D Imaging, and, thus, to ISPRS events, as well as supporting the activities in a number of application-oriented ISPRS WGs such as V/2 and V/6.
- It will directly contribute to two of the objectives and activities of the ISPRS by encouraging the exchange of scientific papers related to TLS
- and will help promote co-operation with related organisations having scientific interest in TLS.

<http://www.tlsdatabase.ucalgary.ca/>



- The webpage features the following tabs:
- across the top menu:
  - Home
  - TLS - A brief description of TLS
  - Search Articles - A mechanism that allows searching by author, publication name or title keyword
  - Contact
  - Feedback
- The sidebar comprises:
  - links to general TLS themes,
  - a search mechanism that accepts author, title keyword or publication name
  - queries and other links, including ISPRS website.

# TLS database home page



The screenshot shows a Windows Internet Explorer browser window displaying the TLS Database home page. The browser's address bar shows the URL <http://www.tlsdatabase.ucalgary.ca>. The page header includes the text "UofC • THIS IS NOW" and navigation links for "Prospective Students", "Current Students", "Alumni", and "Community". The main content area features the ISPRS logo and the title "Terrestrial Laser Scanning Database". A navigation menu includes "Home", "TLS", "Search Articles", "Contact Us", and "Feedback". A central message states "This page is currently under construction." Below this, a paragraph explains that the TLS Database (TLSD) will contain a comprehensive on-line bibliography with respect to Terrestrial Laser Scanning. Another paragraph states the aim of the project is to elevate the international profile of the International Society for Photogrammetry and Remote Sensing (ISPRS) in terms of terrestrial laser scanning (TLS) and 3D imaging research by compiling an authoritative, on-line bibliography on TLS. A third paragraph notes that the TLSD is implemented by a research team at the University of Calgary under the leadership of Dr. Derek Lichti, Associate Professor, Department of Geomatics Engineering, who is also the Chair of the ISPRS Working Group V/3 Terrestrial Laser Scanning and 3D Imaging. On the left side, there is a search box with the text "Search by Keyword, Author and Title" and a "Submit" button. Below the search box is a "Quick Links" section with links to "ISPRS" and "ATLS Book". The browser's status bar at the bottom shows "Internet" and "100%".

# Demonstration of sidebar search results for the keyword calibration.



The screenshot shows a Windows Internet Explorer browser window displaying the ISPRS Terrestrial Laser Scanning Database website. The address bar shows the URL: <http://www.tlsdatabase.ucalgary.ca/search/keyword?filter=calibration>. The website header includes the ISPRS logo and the title "Terrestrial Laser Scanning Database". A navigation menu contains links for Home, TLS, Search Articles, Contact Us, and Feedback. A sidebar on the left provides a search interface with a text input field containing "calibration" and a "Submit" button. Below the search bar are "Quick Links" for ISPRS and ATLS Book. The main content area displays a list of search results, each with a citation from the ISPRS Journal of Photogrammetry and Remote Sensing. The results include:

- Lichti, D. D. 2008, 'A method to test differences between additional parameter sets with a case study in terrestrial laser scanner self-calibration stability analysis', *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 63, no. 2, pp. 12.
- Hofe, B., Pfeifer, N. 2007, 'Correction of laser scanning intensity data: Data and model-driven approaches', *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 62, no. 2, pp. 40.
- Lichti, D. D. 2007, 'Error modelling, calibration and analysis of an AM-CW terrestrial laser scanner system', *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 61, no. 5, pp. 18.
- Lichti, D. D. 2007, 'A method to test differences between additional parameter sets with a case study in terrestrial laser scanner self-calibration stability analysis', *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 63, no. 2, pp. 12.
- Sikaloud, J.; Lichti, D. D. 2006, 'Rigorous approach to bore-sight self-calibration in airborne laser scanning', *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 61, no. 1, pp. 13.
- Wagner, W.; Ulrich, W.; Ducic, V.; Metzler, T.; Studnicka, N. 2006, 'Gaussian decomposition and calibration of a novel small-footprint full-waveform digitising airborne laser scanner', *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 60, no. 2, pp. 13.
- Hastedt, H. 2004, 'A Monte-carlo simulation in Close-range Photogrammetry', *Xxxth ISPRS Congress: Proceedings of Commission V*, pp. 18-23.
- Alams, R.; Baron, A.; Bosch, E.; Casacuberta, J.; Pla, M.; Sanchez, S.; Serra, A.; Talaya, J. 2004, 'On The Accuracy and Performance of The Geombl System', *Xxxth ISPRS Congress: Proceedings of Commission V*, pp. 262-267.
- Ohtake, T.; Chikatsu, H. 2004, 'Development of Image Based Integrated Measurement System and

*Sample database record, which gives bibliographic details plus the URL of the paper*

A screenshot of a Windows Internet Explorer browser window. The address bar shows the URL 'http://www.isprs.org/ucalgary.ca/database/node/29'. The browser's menu bar includes 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'. The page content is from the ISPRS Terrestrial Laser Scanning Database. The main heading is 'Terrestrial Laser Scanning Database' with a background image of a point cloud. Below the heading is a navigation menu with 'Home', 'TLS', 'Search Articles', 'Contact Us', and 'Feedback'. The left sidebar contains a search box with the text 'Search by Keyword, Author and Title' and a 'Submit' button. Below the search box are 'Quick Links' for 'ISPRS' and 'ATLS Book'. The main content area displays the following information:

**Error modelling, calibration and analysis of an AM-CW terrestrial laser scanner system**

**Publication type:**  
Journal Article

**Authors:**  
[LKH, D. D.](#)

**Source:**  
ISPRS Journal of Photogrammetry and Remote Sensing, Volume 61, Issue 5, p 18 (2007)

**URL:**  
<http://www.sciencedirect.com/science/article/B5VF4-4MD9G3K-1/2/07b3961e6ba87bddaaf4eed1c6c5bcf4>

**Keywords:**  
LIDAR; laser scanning; calibration; error; modelling

The browser's status bar at the bottom shows 'Done' and 'Internet'.

# *Portability*



- The website was built using the Drupal open source web content management system available at the University of Calgary.
- Portability of the templates used is thus quite likely limited to those who use Drupal.
- The listings of articles that comprise the database are very portable.

# *Further thoughts*



- EuroSDR and ISPRS has interest in 3D Landscape Models
- EuroSDR has strong links with NMAs
- We should think about combining these interests in the future:
  - Joint workshops
  - Involve international community
  - EuroSDR sessions at ISPRS Congress in 2012
  - NMA sessions at ISPRS Congress