

## Report on the ISPRS Workshop on *Laser Scanning 2011*

### 1. General

*Laser Scanning 2011* was held at the University of Calgary (the Sponsoring Organization) campus from 29-31 August 2011. A tutorial was also held on 1 September 2011. The Workshop Chair and Co-Chair were Derek Lichti and Ayman Habib, respectively, both from the University of Calgary.

It was the 7<sup>th</sup> in a series of ISPRS workshops on laser scanning that began in 1999. It attracted scientists, system developers and practitioners whose work is focused on the modelling and application of point cloud data acquired from laser scanners and other active imaging systems such as range cameras. Paper submissions were invited from the following subject areas:

- Scanner system modelling, calibration and validation;
- Point cloud registration;
- Feature extraction and object recognition;
- Data quality analysis;
- Full waveform data analysis;
- Fusion of LIDAR, image and RADAR data;
- Scanner system development and improvements;
- Mobile terrestrial scanning systems;
- Range imaging cameras and other 3D imaging sensors.
- Modelling of natural and urban areas;
- Engineering, hydrologic, forestry and other novel applications of laser scanning;

Papers were accepted on the basis of the results of a double-blind peer review process. Each paper was reviewed by two referees. The final program comprised 34 papers presented orally and 22 papers presented as posters. Each day of the workshop commenced with an invited presentation; Jan Skaloud, Grady Tuell and Hans-Gerd Maas were the invited speakers.

Two awards were presented: Best Oral Presentation and Best Poster Presentation. Four anonymous judges (this group excluded the Workshop Chair and Co-Chair) recommended the following recipients:

**Best Oral Presentation:** Mohannad Al-Durgham for the presentation of his paper ANALYSIS OF TWO TRIANGLE-BASED MULTI-SURFACE REGISTRATION ALGORITHMS OF IRREGULAR POINT CLOUDS (co-authored by Ivan Detchev and Ayman Habib)

**Best Poster Presentation:** Jean-François Hullo, Pierre Grussenmeyer, Tania Landes and Guillaume Thibault for the poster of their paper **GEOREFERENCING OF TLS DATA FOR INDUSTRIAL INDOOR COMPLEX SCENES: BEYOND CURRENT SOLUTIONS**

Ninety (90) participants from 22 different countries registered for the workshop. The country-of-origin distribution is shown in Figure 1.

Thirty-six (36) participants registered for the 1 September tutorial *Probabilistic Data Analysis Using Graphical Models* offered by Prof. Dr.-Ing. Wolfgang Förstner, University Bonn.

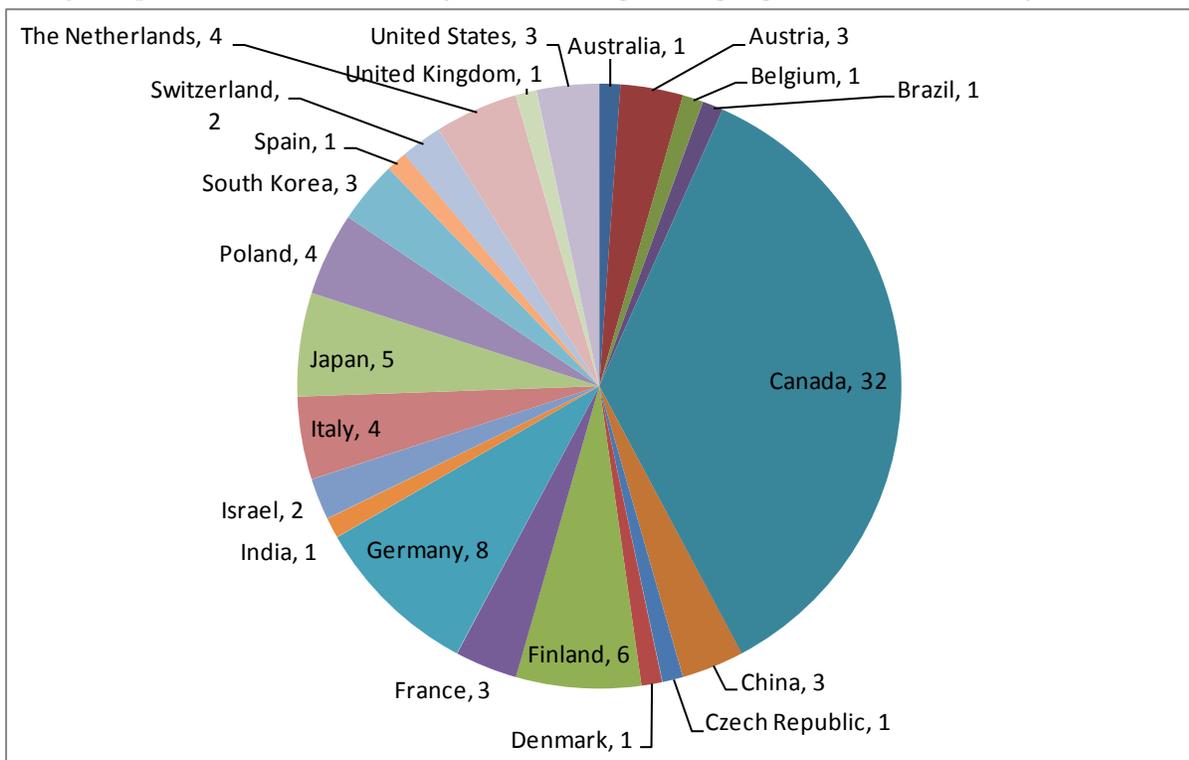


Figure 1. Country-of-origin distribution of Laser Scanning 2011 participants.

Two social events were held: an icebreaker meal on 29 August and a BBQ dinner held in the Rocky Mountains on 30 August.

## 2. Scientific results

Many authors presented notable scientific contributions that can be briefly summarized as follows:

- Geometric extraction and modelling of individual trees from TLS point clouds
- Recognition of objects from mobile laser scanner point clouds of urban scenes

- Full waveform modelling
- System modelling and calibration of airborne and terrestrial systems
- The automation of point cloud registration
- Other ranging sensors: triangulation and ToF range cameras

Areas requiring further research include the recognition of objects from terrestrial and mobile laser scanner scenes and the modelling and calibration of other ranging sensors.

### **3. Proceedings**

The conference proceedings were produced in digital format. Copies were made available by *sendspace* to the ISPRS Webmaster, Council and librarian at ITC. The proceedings have been available on the ISPRS website since 26 August 2011.

### **4. Conclusions and Recommendations**

Laser Scanning 2011 was a successful workshop. The quality of both the papers and the oral presentations was quite high overall thanks to peer-review process. I recommend that the peer-review process continues for this series of workshop.

Oral presentations were organized in a single stream only each with a 20 minute presentation time. I recommend that this format continues for this series of workshop.

It is clear that the Laser Scanning workshop series should continue. Though the next sponsoring organization could not be named for the 2013 workshop since the Commission and Working Group structures are not yet known, Dr Marco Scaioni, currently of Milan Polytechnic, has expressed interest in organizing the next Laser Scanning Workshop.

Derek Lichti  
Chair, Laser Scanning 2011