

ASPRS LiDAR Committee minutes – April 29 2008

- 2:00 Introduction by Chris Hopkinson (incoming chair)
- Thanks Andre Samberg for all his efforts as chair on behalf of the committee in last two years.
 - Relevant Activities
 - Accuracy reporting guidelines
 - Lidar Handbook
 - LAS data format
 - ASPRS, MAPPS, ACSM procurement guidelines – how may we feed into specifications for Lidar contracts to communicate between clients and service providers
 - New vice chair – Randy Rhoads volunteers
Four expressions of support, no objections
Vote for Randy – Unanimous decision in support of Randy’s nomination
- 2:10 Chris – Overview of agenda of meeting
- 2:12 Ty Naus begins presentation on post spacing and density
Help with guidelines with spacing and density
Add 3D point density information
Usually done by putting box around several points
Questions about boxes – orientation, size, location
Flight lines further complicate density quantification
Solution – delauney triangulation and then measure the distance between points
- 2:25 Dr. Ayman Habib presentation Error Budget, Quality Assurance, and Quality Control Procedures ...
- 2:40 Tristan Goulden presentation
- 2:50 Question re: quality assurance, objects not removed from bald earth, LAS classifications correct etc. Is this being addressed?
95 % clean means what?
- 2:53 How can we effectively communicate errors and such seen in data? How have we defined specifications? Has data met specifications?

Need: Effective communication of errors and uncertainties between service providers and end-users.
- 2:58 Issues:

Gov't: discontinuities in measurements. Creates lack of confidence in LiDAR data.

End User community educated on what should be expected.

Discontinuity

2 major themes : temporal discrepancies and strip matching.

Changes based on modified land formations: plowing fields etc.

How can we smooth discontinuities?

Need for tools and procedures for merging discontinuous datasets

Dealing with all possible categories of discontinuity possibly beyond committee; at least in the immediate term.

3:11 Is Ty's proposal something to follow?

Karen Schuckman provided a summary of what was presented at ILMF to guide discussion and develop a framework.

Categories:

Communicating point density,

Calibration could be a contentious issue as everyone has personal calibration procedures

Metrics for assessing calibration and guidelines. But no definite calibration procedure.

3:19 Cornerstones of a new framework

How are we reporting: spatially

4 'buckets': Sensor and support System, Geomorphology (target characteristics), Processing (smoothing, thinning, raising, lowering, sampling), What should a report look like (ie. Table and number or spatial coverage), correct sampling strategies

Gov't – spatial coverage is desired

3:30 Chris – 4 step framework

Vertical and horizontal accuracy reporting in progress.

Karen volunteers to send PPT as well as give overview. Would like feedback ASAP.

3:33 Guidelines for terrain effects: point spacing effect definition, how errors propagate. Tristan talks on terrain point spacing and how slope impacts vertical uncertainty.

3:36 Jamie Young volunteer post processing, Chris to assist

- 3:37 Position paper on discontinuities, Jamie Young, Tim Blak also volunteers for discontinuity review
- 3:40 Martin Flood Reminder discussion form on the USGS website
- 3:40 Mike Renslow. Best Practices LiDAR handbook.
 ASPRS support project. Will edit such a document.
 Airborne Topographic LiDAR manual.
 Chapters
 History
 Airborne LiDAR instruments and Technologies
 Best Practices and guidelines
 Typical Data Products
 QA and QC
 LiDAR data and complementary technologies
 Accuracy Standards and guidelines
 Applications
 Glossary
 Sample Data
- Send out draft outline. Volunteer for author, co-author or reviewer. Mix of input, private, public and academic
- 2 years deadline from now – anticipate ready in late 2010
- Hard Copy and electronic document
 Intended audience: Beginning of intermediate level to sophisticated user
- Chris suggests adding a chapter / appendix on RFP writing for LiDAR surveys. Examples exist in ASPRS DEM users manual
- Practical Guide for users. Quick changing, electronic add-on?
 Manufactures very agreeable to participate in giving information to practical guide of handbook.
- 4:00 Lewis Graham: Presentation on LAS data format. 1.1 (official ASPRS standard)
- Need waveform module for LAS 1.2, add to LAS 2.0 later. Delay LAS 2.0 slightly
- LAS 1.2 POSIX time instead of GPS week
- Add new Standard Type point record
 Adds RGB for cameras
- Compatible with LAS 1.1

Proposal: Cancel current proposal of LAS 2.0, expedite approval of 1.2, immediately start work on new format for LAS 2.0 that includes waveform data while removing tripod lidar data support.

4:12 Lewis Graham proposed a motion for the above LAS 1.2 recommendation.

Seconded by Jamie Young.

Unanimous vote to approve LAS 1.2 and postpone LAS 2.0 until it is suitably modified to meet industry needs.

4:24 Chris closes meeting

Summary of Action Items:

Action Item 1: Ty Naus to share presentation with committee and compile a report with recommendations for review on point density reporting.

Action Item 2: Ayman Habib, with assistance from Jim Van Rens, to compile report on calibration best practice options and suggestions for review by committee

Action Item 3: Karen Schuckman to send copy of ILMF PowerPoint to committee members to provide guidance on the data error reporting.

Action Item 4: Jamie Young, with assistance from Chris Hopkinson, to compile a report on data uncertainties due to post-processing procedures.

Action Item 5: Jamie Young and Tim Blak to compile report on categories of data discontinuity on methods adopted to report and address such discontinuities.

Action Item 6: Mike Renslow to distribute table of contents of proposed chapters for the ASPRS airborne lidar manual. Volunteers for chapter contributions and review will be requested.

Action Item 7: Becky Morton to submit LAS 1.2 to the standards committee for official ASPRS approval.

Action item 8: Lewis Graham to solicit feedback from the sensor manufacturers on waveform data formats to facilitate continued development of LAS 2.0.

Minutes recorded by Tristan Goulden (minor additions and clarifications by Chris Hopkinson).